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THE AAF IN THE MIDDLE EAST

A STUDY OF THE ORIGINS OF THE NINTH AIR FORCE

[redacted]

Prepared by
ASSISTANT CHIEF OF AIR STAFF
INTELLIGENCE
HISTORICAL DIVISION

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The original of this monograph and the documents from which it was written are in the USAF Historical Division, Archives Branch, Bldg. 914, Maxwell Air Force Base, Alabama.

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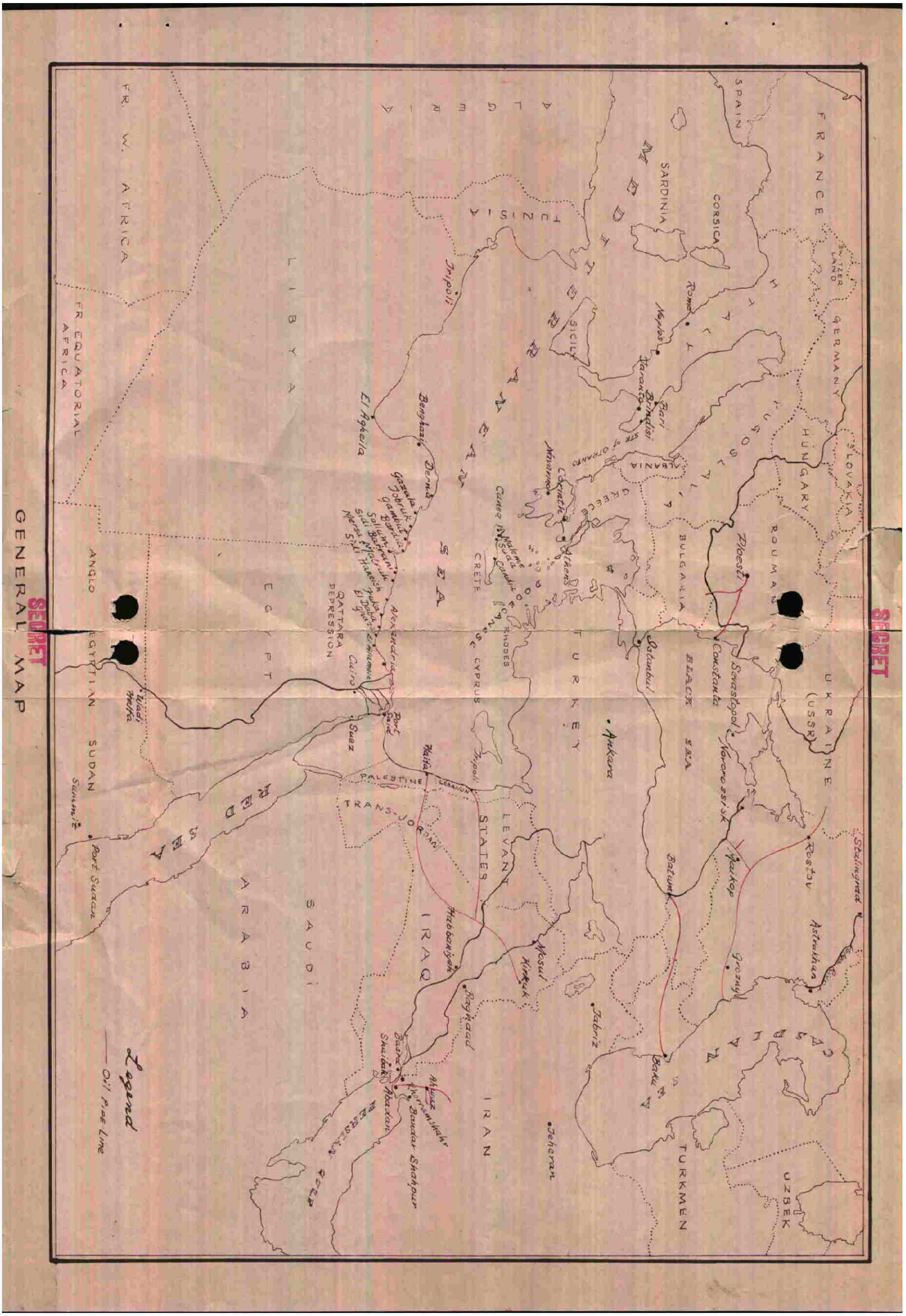
Prepared by
Assistant Chief of Air Staff, Intelligence
Historical Division
June 1945



CONTENTS

MAPS

The AAF in the Middle East

A Study of the Origins of the Ninth Air Force

Chapter I

ORIGINS OF AMERICAN INTEREST IN THE MIDDLE EAST

At the close of 1940, the movement of German air units to the Mediterranean area indicated that the tempo of the war in this theater was likely to increase. In the Western Desert, the campaign begun by Italy in September and supported by a thrust from East Africa had been turned in favor of the British by the fall of Sidi Barrani on 11 December. Under continued British attack, the Italians had withdrawn into Libya, with losses sufficiently heavy to prevent Marshal Graziani's army from being an immediate menace to Egypt. This reversal of the military situation offered some relief to the British, who, in the midst of preparations for their offensive, had felt obliged to go to the aid of Greece when Italian forces crossed her frontiers late in October.

Such air and naval assistance as Great Britain could send had enabled the Greeks to meet the invaders with stiffened resistance. Yet the diversion of aircraft to Greece was made at the expense of the RAF, whose limited resources in the Middle East suffered from this further dispersal. The Mediterranean fleet, on the other hand, had benefited temporarily from the opening of the Greek campaign, in that the availability of bases in Crete afforded it greater freedom and security in the pursuit of Italian ships. On the apparent assumption that there was need to offset this advantage and to occupy the British more effectively than the Italians had succeeded in doing, German

bomber units experienced in attacking shipping had been transferred to Italy and Sicily.

Although the plans of the enemy were still a matter of conjecture, many observers saw in these developments the initial steps in a two-pronged thrust toward southwest Asia--a region which Imperial Germany had hoped for a quarter of a century to dominate. Standing at the gateway to three continents, the Middle East had always occupied a strategic position, but the importance of its location had been greatly enhanced by the recent trend of events. From a military point of view, however, its principal asset consisted in the abundant supply of oil in Iraq and Iran. From Kirkuk in the Mosul district of Iraq, this oil is piped to Haifa in Palestine and to Tripoli in the Lebanon; from the Ahwaz district of Iran, it flows to the great refineries at Abadan, whence it finds its chief outlet through the Iraqi port of Basra. Any power holding this territory would therefore be provided with one of the sinews of war--a consideration which Great Britain and France had in mind when the pipe lines to the Mediterranean were laid through territories over which they exercised mandatory control.

Inasmuch as Germany's lack of oil was thought to constitute her "Achilles' heel," it seemed probable that she hoped eventually to acquire Middle East sources to supplement the production of Roumanian fields already under her "protection." If Turkey's coolness to German propaganda should present an obstacle to an eastward thrust from the Aegean, there was reason to suppose that the hand of the Axis might fall upon Egypt. In fact, a drive across Northern Africa to the

Persian Gulf would serve a double purpose by giving the Axis access to oil supplies and, at the same time, enabling it to strike a heavy blow at British imperial communications. Confronted with such possibilities, Britain had considered it perilous to allow further German advances in the Balkans. The extension of aid to Greece entailed serious risks, however. With a superior air force and no substantial commitments elsewhere, Germany could throw the bulk of her weight against the Balkan Peninsula, if need be. For a new expedition, Great Britain, on the other hand, had few troops and few airplanes to spare, for she was faced with the necessity of guarding her home islands from invasion, of providing protection for the Suez, and of continuing both the Western Desert and East African campaigns. No one could foresee what proportions the ensuing conflict would assume. There was, however, a growing feeling that the Middle East would prove of vital importance to the Allied Nations, not only as a place to defend but also as a potential base from which ultimately to launch a counter-offensive.[1]

Since the American rearmament program had been undertaken with the object of enabling the United States to wage war under whatever necessity might arise, it had been decided soon after the opening of the Western Desert Campaign that United States military observers should be sent to the Middle East. At a time of rapid technical and tactical development, the Army Air Corps was especially desirous of drawing upon British experience in this theater.[2] The first of such observers, Col. Gerald E. Brower and Maj. Demas T. Craw, had arrived in Cairo early in November 1940 to investigate problems connected with the role

of air power in modern warfare. Under the tutelage of RAF officers, they spent several profitable weeks in Egypt before crossing to Greece
3
to study operations there.

With the approach of spring the Balkans became the center of attention, as Nazi armies concentrated on the borders of Yugoslavia and Greece, and then invaded the two countries on 6 April 1941. Although the position of the United States was one of official neutrality, Americans were deeply concerned in the struggle. Convinced that its own defenses could best be strengthened by aiding the countries at war with those powers which menaced its security, the United States had been furnishing supplies and equipment to Great Britain and her allies
4
under a cash-purchase arrangement. These orders were now being delivered in considerable volume, and the passage of the Lend-Lease Act, on 11 March, had made possible the formulation of an ampler program of assistance. It would be months, however, before our factories could have ready the equipment which these plans represented. In view of the critical situation in the Balkans, efforts were made to send to the harassed nations airplanes and armament from our stocks on hand. Although these supplies were afterwards put to good use by the British, and by such Yugoslav and Greek forces as were able to join them in Palestine and Egypt, these shipments failed to reach their original
5
destination. By 18 April, Yugoslavia had been overrun; 9 days later Athens was occupied by the invaders; and the Allied armies were obliged to fall back upon Crete. By the end of May, it too had been lost, and Egypt itself was at stake.

they were not obliged to route their messages through time-consuming channels proved a decided advantage--and one that added greatly to their usefulness. By keeping their companies informed about the faults of planes, the modifications undertaken in the field, and the requirements peculiar to the theater, these representatives were destined to play an increasingly important role.[9] Incidentally they passed on to the British a good deal of technical information and, along with personnel of the Army Air Corps, often proved instrumental in winning acceptance for new types of planes.[10] In the case of the Kittyhawk, for example, the servicing of guns from the bottom instead of the top of the wing panel, as in the Hurricane and Spitfire, met with disapproval until the British realized how much more easily the guns could be cleaned under this arrangement; that is, simply by spraying them with gasoline, which drained out through the service holes.[11]

In response to requests from the RAF for instructors and supervisors in the work of maintenance and overhaul, American aircraft companies also sent to the Middle East in the spring and summer of 1941 groups of skilled mechanics, each equipped with his own kit on account of the scarcity of hand tools there.[12] Before the end of the year, other technicians recruited under lend-lease terms to assist the British and other belligerents in assemblying American-manufactured equipment, and to give them instruction in the essential features of its operation, enlarged the number of Americans employed in the Middle East.[13]

Inasmuch as extended lines of communication in Egypt created for the British a problem of maintenance and supply comparable to one which

This turn of events made American aid all the more important, and fortunately additional ways of extending help to the Middle East had been found. With the capture of the Eritrean port of Massaua, on 8 April, the Red Sea had been brought completely within British control and was opened, by presidential proclamation, to American shipping 3 days later. From West Africa, a thin trickle of American-manufactured P-40's, erected at a British assembly plant at Takoradi, had already begun to reach Egypt. Owing to the inexperience of some of the British and Polish pilots in the Middle East and their unfamiliarity with the Tomahawk, many of the P-40's were wrecked in being ferried from the Gold Coast to Cairo, and the remainder were not always used to advantage.[6] In the hope of remedying conditions, a few officers and enlisted men of the U. S. Air Corps were dispatched to the Middle East in the spring to give instruction in the operation and maintenance of planes being furnished to the British.[7] Assigned to tactical units, these technicians fulfilled their mission so satisfactorily that upon the arrival of the first Kittyhawks later in the year, RAF personnel were considered capable of carrying on the work of instruction.[8]

Desirous of learning how their aircraft stood up under actual combat conditions, American manufacturers early adopted the practice of sending representatives to the Middle East, where the Western Desert Campaign provided a veritable laboratory for such a purpose. These experts not only assisted in the solution of mechanical problems, but were able to make careful observations in the field and to report defects directly to the factories with which they were connected. The fact that

would confront an American air force at war, the Materiel Division had recommended in December 1940 that a specialist be sent to study the organization and operation of the British Maintenance Command in the Middle East.[14] In the spring of 1941 this investigation was undertaken jointly by Capt. Edwin S. Perrin, detailed to Cairo for this purpose, and by Colonel Brower, already serving as an air observer in this theater.[15] Because of the current importance of the matter, these officers were ordered to report all possible information on the subject. It was thought that the experience thus gained would be useful in assisting the Air Corps in handling problems pertaining to the development and maintenance of equipment under service conditions. Since the Desert Campaign was attracting a good deal of attention, these observers were also instructed to take note of such topics of general interest as antiaircraft defense, organization and operation of field-army headquarters, supply and communications, motor transportation of troops, the organization and operation of individual units, and the coordination of air, ground, and naval units in special operations.[16]

Meanwhile, the dispatches of our Military Attaché in Cairo, Maj. Bonner Fellers, kept us informed of the situation in Egypt. During the Balkan engagement the British had suffered reverses in the Western Desert. The transfer of a German air unit to Sicily had enabled the Germans to bombard Malta, harry British shipping, and bring convoys from Italy to North Africa in increasing numbers.[17] In the apparent hope of diverting British forces from Greece, the Germans had crossed to Libya to test British strength and efficiency and to experiment

with desert equipment. As a result, General Rommel's panzer units had reached the Egyptian frontier in June, and the Axis was holding airdromes within striking distance of the Suez Canal and the naval bases dependent upon it. By transferring forces from Sicily and Greece, it was feared that the Germans could assemble sufficient air power to control the southern and eastern shores of the Mediterranean.[18] To protect the Haifa pipe line and to forestall Axis collaboration with Vichy, the British and the Free French had undertaken the joint invasion of Syria on 8 June 1941, and strenuous efforts were being made to hold the German armies on the Egyptian frontier.

As a base for the defense of the Middle East, Egypt offered many advantages. It had space for the training and accommodation of large forces, routes of communication, and harbor facilities; from its Red Sea wells, it could furnish oil for ships, tanks, and planes. Because of the character of the terrain, landing fields could be prepared with a minimum of effort, and consequently it would be possible to establish here bases from which tremendous forces, once organized, might be transported across the Mediterranean to attack Nazi-held Europe. Although the arrival of men and materiel in Egypt compensated in part for the heavy losses sustained in the Greek and Cretan campaigns,[19] their numbers were rigidly conditioned by the scarcity of shipping space and the time consumed in the voyage around Africa. With Axis ships shuttling back and forth across the few hundred miles of sea between Italy and Libya, it seemed unlikely that reinforcements and supplies could reach the Middle East soon enough to be of service. The invasion of the Soviet

Union by the Germans on 22 June 1941 therefore came as a respite, for it reduced to some extent the Axis threat to this area. In fact, the withdrawal of German aircraft from the theater had been noted for several days before the outbreak of hostilities. The assumption that these planes and their crews had been transferred for employment on some other front seemed borne out by the presence of a greater number of Italian pilots in the Western Desert after the opening of the Russian campaign.[20]

During the hot summer there was reason to suppose that the fighting in North Africa would be limited to light skirmishes. In the course of these months, the British therefore mustered their strength for the resumption of hostilities in the fall. Anticipating in the Western Desert a renewal of the German practice of attacking airfields with fighter planes—a method which had proved most effective in Crete—the British were engaged in echeloning their airdromes to the rear. Airfields for refueling and rearmament were placed 25 to 50 miles behind the lines, while operational fields for squadrons were located between 80 and 100 miles from the front, and base fields as much as 120 to 150 miles to the rear. Theoretically, at least, each field was to have complete mobility, and all airdromes were to be widely dispersed. A beginning of the "leapfrog" system, later used so satisfactorily, was to be seen in a plan providing for the occupation of forward operational fields by only half of a squadron at one time.[21]

The skillful employment of German air power in the Cretan campaign had also shown that the success of military and naval operations was

contingent upon the cooperation of air units.[22] For such coordination of action the British air force in Egypt was wholly inadequate. In a series of urgent meetings late in June 1941, British representatives discussed with officials of the Division of Defense Aid Reports and of the Army Air Corps the question of what could be done to meet the critical need for planes in the Middle East. Especially acute was the problem of prompt delivery. With the loss of the French fleet in 1940, the British had been cut off from the western Mediterranean, and in recent months the activity of the German air force in Sicily had virtually closed their only direct air route, which ran by way of Gibraltar and Malta.[23]

There was, fortunately, an alternative to shipping planes from Great Britain and the United States by the long passage around Africa. From 1931 to 1936, an air route from Khartoum in the Anglo-Egyptian Sudan to Lagos on the Nigerian Coast had been plotted by British civilian airmen. A few airfields, hewn from the jungle or laid out on the desert, had made pioneering operations possible, and in the following years these had been extended to Accra and Takoradi. Only after the closing of the Mediterranean, however, had the usefulness of the route been fully realized. Then, with several large flying boats bought from Pan American Airways, the British had inaugurated a transport line running from Great Britain to Gibraltar, and thence southward to the Gold Coast, where land-based planes continued the service to Egypt.[24]

Across this route, in the fall of 1940, British pilots had begun to ferry squadrons of Hurricanes and Blenheims shipped from the British

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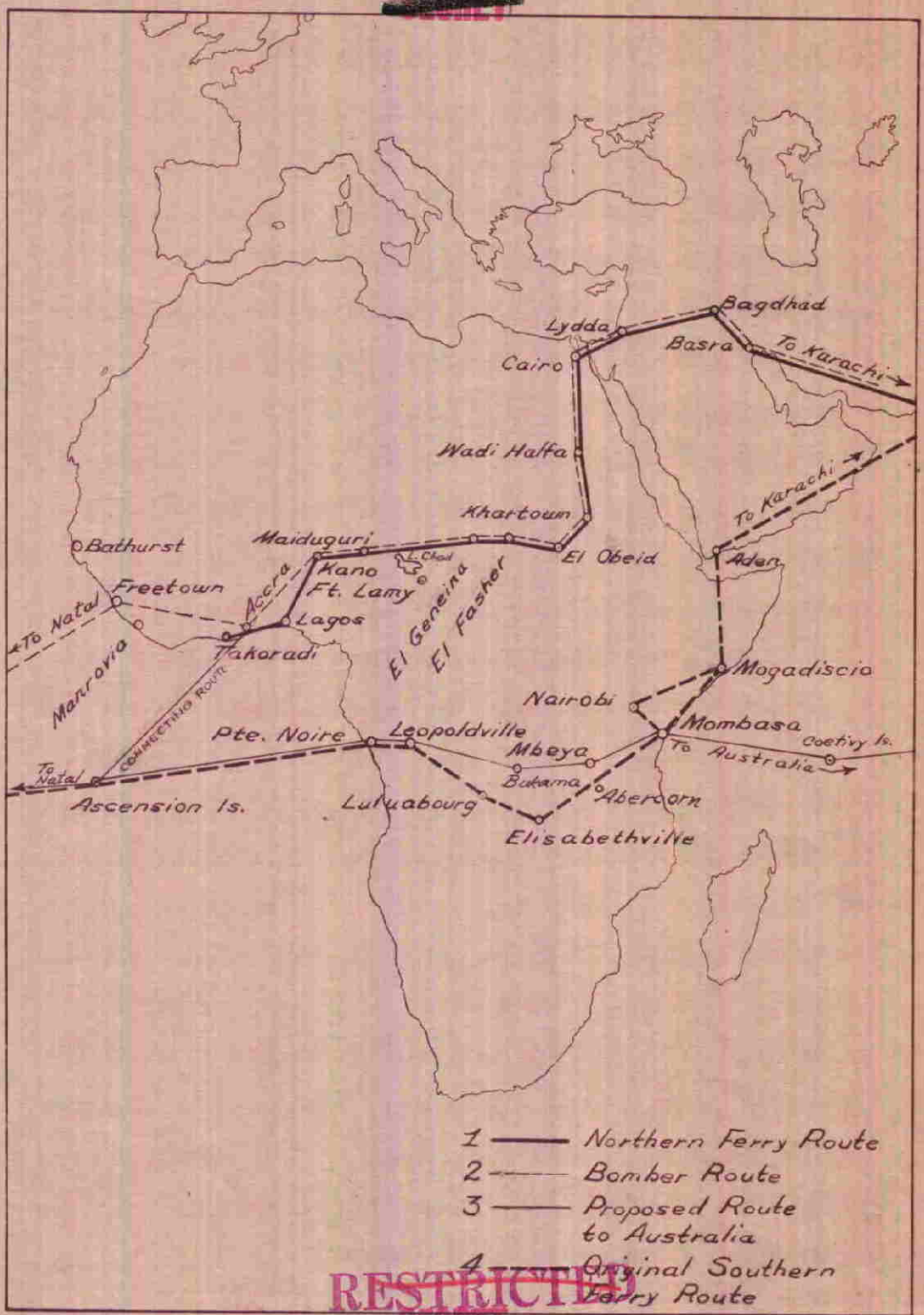

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FERRY ROUTES

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Isles to Takoradi, where at a British-built plant they were assembled, tested, and made ready for convoy. 25 In this way, the time consumed in the trip around Africa was shortened by weeks. Although still in the experimental stage, operations had expanded steadily. With increased production of planes, this avenue promised to become one of the most important reinforcement lanes to the Middle East.

The flight across the continent was by no means an easy one, for the weather was subject to sudden and violent changes, and geographical conditions varied greatly. Maps were few and inaccurate, and inland radio and meteorological stations nonexistent. The first leg of the route, from Takoradi to Lagos, followed the hot, malaria-ridden coast, where thunderstorms and line squalls complicated flying during the rainy season. From Lagos to Kano, the course ran northeast across forests overhung with clouds, past the junction of the Niger and Kaduna rivers, and over the rocky hills of central Nigeria. Here the vegetation thins out to a park-like growth, and the rich, red soil supports farming. Between Kano and Maiduguri the land is level and without distinctive topographical characteristics, a lack which proved a great disadvantage to pilots, for here is encountered the dust haze blown southwest from the desert and locally termed "the harmattan." East of Maiduguri for some 300 miles, stretch the swamps and rivers which constitute the inland drainage basin of the Chad, a little-known area where landing grounds were to be found at only a few widely scattered posts like Fort Lamy and Ati.

In the Anglo-Egyptian Sudan, the first stop was El Geneina, one of the most inaccessible of RAF stations, with the nearest white outpost 200 miles across the mountains and its base of supplies some 700 miles distant. Beyond the twin peaks of Barra Symbal lay El Fasher, which is virtually an oasis, although the surrounding country supports camel thorn and prickly grass and is therefore not truly a desert. From here to El Obeid and on to Khartoum, the terrain is monotonously flat and deteriorates steadily into desert upon approach to the Nile. The last 1,000 miles, from Khartoum to Cairo (Heliopolis), constituted the simplest part of the flight, for the river and railroad served as guides to navigation, and the prospect for making a successful forced landing was good. Despite these advantages, vigilance could not be relaxed, for violent sandstorms sometimes arose and mirages and shimmering heat-glare complicated landings at airdromes like Wadi Halfa.[26]

Although the Khartoum-to-Cairo stretch of the trans-African route represented an older and better-established course, the newer portion from Khartoum westward was indeed a primitive affair. Its inadequacies—small fields, short runways, and service stations with limited facilities—accounted, in part, for the number of planes damaged or lost in making the crossing. Since the British had employed their bombers at home, large airdromes had not been needed for the fighter planes which had been flown across Africa.[27] If Egypt were to be furnished with aircraft in a short time, it was obvious that this trans-African ferry route must be transformed into an effective airline capable of providing for

bombers as well as for a greater number of fighters, and that an air lane across the South Atlantic must be inaugurated, in order that bombers could be flown all the way from the United States.

During the Anglo-American discussions in the summer of 1941, it was proposed that the route should run from Miami or West Palm Beach to American and British airfields in such West Indian islands as Puerto Rico and Trinidad, and thence by several short hops to Natal, on the hump of Brazil. After approximately 1,800-mile flight across the South Atlantic to Bathurst in Gambia, or Monrovia in Liberia, it would then connect with the trans-African line.[28] A chain of airfields through the Caribbean and down the east coast of South America had already been developed by Pan American Airways. There was, however, a possibility that Brazil, as a country then neutral, might object to military planes crossing her territory and using her airdromes. Fortunately she offered full cooperation and provided a corridor through which American transport and combat planes could pass on their way to the Middle East.[29]

Since there were, at the time, few American airmen qualified by training and experience to fly so hazardous a course, it was clear that the undertaking would have to be assumed by a commercial airline with sufficient facilities and experience to make a success of the enterprise. Frequent consultations with the civil aeronautics authorities and officials of commercial companies led the War Department to choose Pan American Airways for the task. After making a rapid survey of the

route,[30] this company consented to undertake the project.

According to the contracts of 12 August 1941, the United States Government was to provide planes, priorities, and money from lend-lease funds to finance the enterprise. The establishment and operation of the South Atlantic and trans-African airways and the development of transport service on both legs of the route were the obligations of Pan American Airways (PAA) and Pan American Airways - Africa, Ltd. (PAA-Africa, Ltd.), a subsidiary founded to cope with the problems of the African assignment. In addition, Pan American Air Ferries, Inc., another subsidiary, assumed the responsibility for actual ferrying to the Middle East of bombers from the United States and pursuit planes from West African assembly plants, where they were piling up through lack of pilots capable of flying them to Egypt.[31]

Possession of a series of bases running through the Caribbean and along the Brazilian coast, facing the "Narrows" of the Atlantic enabled Pan American Airways to establish the overseas route with relative ease. The African project presented greater difficulties, however. Under the management of a general staff composed of men individually responsible for construction, operation, maintenance, communications, meteorology, and like services, PAA began to assemble shiploads of materiel essential to the building of airfields and the setting up of radio and weather stations and fuel depots.[32] Meanwhile, in Africa, hosts of natives recruited by the beating of drums were engaged in carrying tons of stone for runways, and hundreds of camels

were lumbering across trackless wastes, bearing cans of gasoline to remote refueling posts.[33] Since the British could spare no men to operate the airfields, it was necessary to raise and equip a highly technical force in the United States, transport it a third of the way around the world, spread it over a continent, and maintain it in health. To keep it in supplies across an ocean infested with submarines, and over jungles and deserts lacking both highways and railroads, was an enormous task in itself.

This work was not done in a day. The first members of the African transport service reached Accra in the autumn, just after the close of the rainy season—a fortunate circumstance which enabled them to learn the transcontinental route well before the bad weather of the spring set in.[34] This group was composed of former commercial pilots, reserve officers recently graduated from air schools, and Army Air Corps pilots released for civilian duty with Pan American Airways - Africa, Ltd.[35] Because the facilities of the RAF and the British Overseas Airways Corporation (BOAC) had been placed at the disposal of the American company, it was possible to begin limited operations to Bathurst, Takoradi, and other West African ports almost immediately, and to Khartoum not long afterwards. Before the end of the year Cairo, too, was to be included in the service.[36]

To run ahead of the story briefly, the route was extended across Palestine to Teheran, the Iranian gateway to Russia, and to the Iraqi port of Basra soon after our entry into the war. As the military crisis in the Pacific mounted, extensions to India (Karachi) and to Burma

(Rangoon) also were made.[37] Rapid expansion of the route greatly multiplied the problems of maintenance and supply in Africa, where tools and spare parts were already at a premium. On account of poor roads and lack of transportation facilities, it had not been the intention of Pan American Airways to establish elaborate bases across the continent, but rather to keep a high level of stock at the main base in Accra, to which aircraft in need of repairs could wire for equipment, spare parts, and personnel required to put a plane in condition. It was estimated that in most cases delivery could be made within 48 hours.[38] At the time of America's entry into the war these plans had not yet materialized, but, through the hard work and ingenuity of the operational force, planes were kept in the air, and our connection with the Far East was maintained during the difficult months which followed.[39]

Owing to the necessity of extending runways and strengthening their foundations before heavy aircraft could be flown to the Middle East in any numbers, Pan American Airways had not expected to have adequate landing grounds and other facilities ready for the ferrying of such planes until the end of November, or even the middle of December.[40] As a matter of fact, operations of this kind were begun somewhat earlier. The first bombers to be flown all the way to Egypt are said to have been LB-30's which left the United States in November 1941.[41] Meanwhile, about a dozen of the Pan American airmen who were early arrivals in Africa had been flying with a group of RAF pilots engaged in ferrying across the continent Blenheims, Hurricanes, and

some P-40's assembled at Takoradi. [42] Expansion of personnel soon enabled the American company to assume a larger share of this work. With the help of flight-delivered planes, it was therefore possible for the British to build up their air strength in time for the November offensive, which temporarily flung Gen. Erwin Rommel's forces back from the threshold of Egypt.

In an effort to augment the flow of aeronautical equipment to the Middle East under lend-lease agreement, the responsibilities of the Air Corps Ferrying Command were enlarged, by presidential directive in the fall of 1941, to include the delivery of aircraft to Africa. [43] Steps were taken at once to insure the necessary cooperation of Venezuela and Brazil, and later, that of Liberia too. At the request of the British, who were urgently in need of heavy bombers, the Ferrying Command almost immediately undertook its first commission of this sort--the delivery of 16 Liberators for use on the Egyptian front. Five of the LB-30's* had been dispatched before the attack on Pearl Harbor caused the diversion of the remaining planes to other theaters. [44] Despite this interruption, the possibilities of the route had been demonstrated, and deliveries of heavy aircraft to the Middle East therefore seemed assured. To make equally practicable the air delivery of short-range bombers, of which the British felt an acute need against the coming winter, it was decided in December that provision for their dispatch by way of Ascension Island should be made. The use of this British possession, properly developed, would reduce South Atlantic flights to less than 1,300 nautical miles a leg, a distance not too great with the aid of

* B-24's modified for the British were called LB-30's.

bomb-bay tanks. Although this great volcanic rock comprises only 10 to 12 square miles, with a mountain occupying a part of the area, preliminary surveys indicated that an airdrome of suitable size could be constructed on the so-called southwest plain of the island. In order to reduce the length of the course from Natal to Waterloo by another 200 miles, action was also taken to secure enlargement of the airdrome on Fernando de Noronha, an island off Brazil in direct line of flight to the west coast of Africa.[45]

In view of the large number of planes which the Ferrying Command would be flying over the South Atlantic route in the near future, the United States Government felt that it should obtain from Brazil immediate consent for the sending of Army and Navy units to protect that portion of the course which ran through her territory. The weekly arrival of LATI (Linhas Aereas Transcontinentaes Italianas) planes from Europe, the existence of hostile elements within the country, and the inadequacy of Brazilian troops stationed in north-eastern Brazil rendered the airports of the route extremely vulnerable. It was therefore highly desirable that these points be guarded by United States forces.[46] The scant protection afforded the trans-African route was likewise a matter of grave concern. Sabotage was always a menace and, in case French West Africa were occupied by the Axis, the safety of the entire route would be greatly endangered. For that reason, thoughts were already turning to the possibility of establishing an alternate and more southerly route across Africa.[47]

When the United States entered the war in December 1941, she had already assumed heavy responsibilities in the Middle East. A policy of supplying aircraft to the British had led, through necessity, to a project for sharing in their delivery. To insure their effective employment and to gain from the opportunity the maximum advantage for the American defense effort, it had been decided to send into the theater an increasing number of observers and technicians, a group on whose experience the government was able to draw through the first crucial months of its active belligerency. In the field of maintenance and supply, as the following chapter will indicate, the United States also had made important contributions and gained experience of considerable value.

Chapter II

AID TO THE BRITISH, 1941 TO JUNE 1942

Increased shipments of aircraft and other materiel to the Middle East in the late spring and early summer of 1941 had imposed heavy burdens on the limited facilities of the Red Sea area. South of Suez the ports were primitive, with few docks and scant equipment for the unloading of vessels. Modern warehouses and assembly plants did not exist, and only poor means of transportation afforded communication between the sea and the front. As a joint enterprise, the British and American governments therefore undertook the development of ports and the improvement of highways and railroads in this region.[1] Coupled with this combined effort was an equally important project providing for the establishment of repair and supply depots there, in Eritrea, and in the Levant.[2]

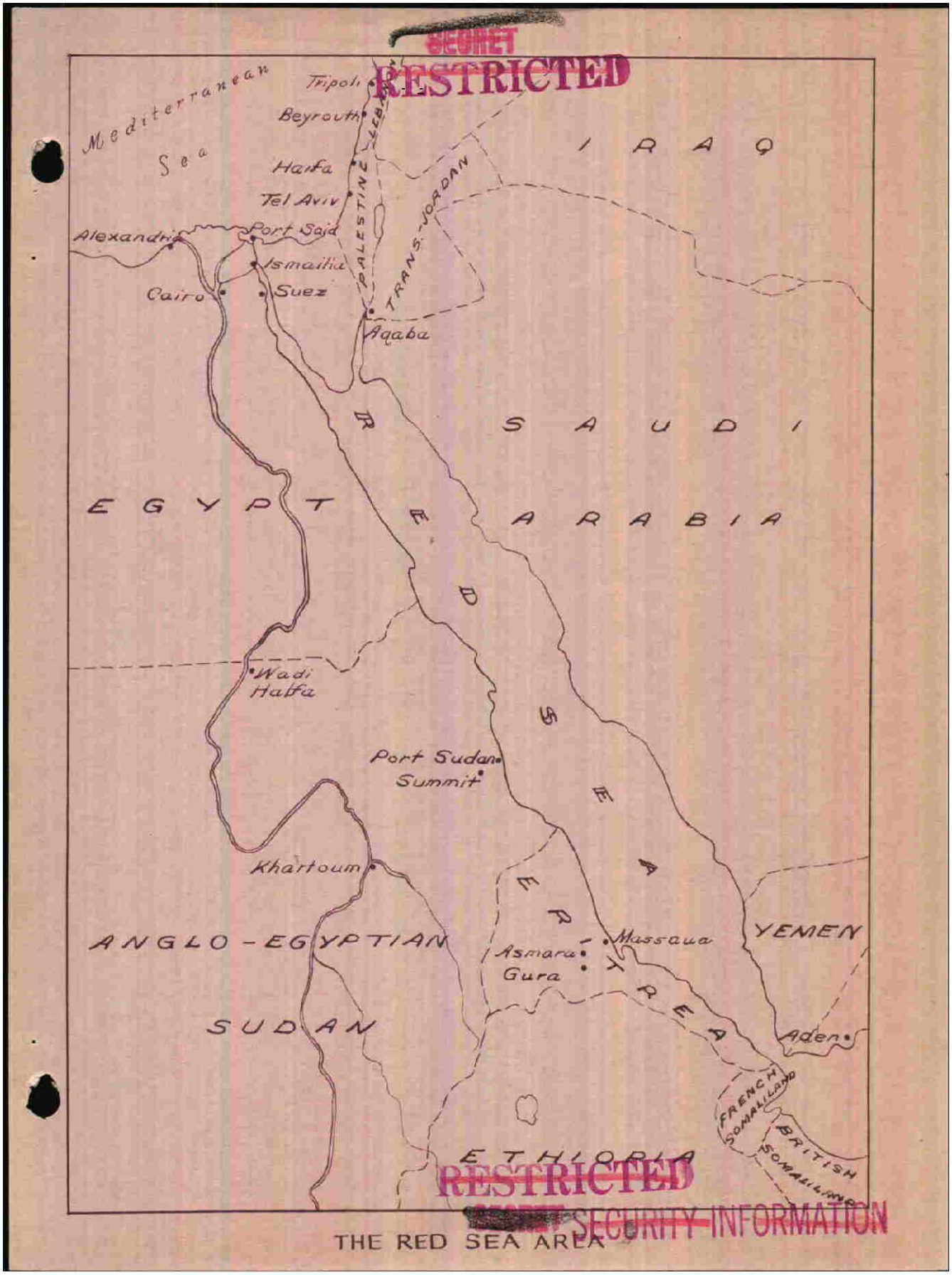
For the protection of Egypt, these undertakings were of particular importance. During the months of July and August, German planes based within striking distance of the Suez Canal had directed their attacks principally against Suez ports, the depot at Abu Suir* (Depot No. 102), and RAF service and maintenance units in the Delta and its immediate vicinity. Without adequate antiaircraft or other defensive equipment, these installations were severely damaged and suffered heavy losses in materiel.[3] Repeated bombings also had a disruptive effect upon the labor situation, and even some of the

* For location of depots in the Delta Area, see map following page 68.

American mechanics engaged in erection and salvage work at these depots made complaint, on the ground that they had not volunteered for service in a zone of such danger.[4] As a result of these circumstances, deliveries were lowered, and for a time the closing of Suez ports to American ships seemed imminent.[5]

Inasmuch as continued bombings were to be expected, there was need for taking steps to meet the situation. After some deliberation, it was finally decided that all concentrated supply and repair depots in this area should be transferred to Eritrea or the Sudan, and that the larger repair bases should be moved even farther to the south. For local requirements, however, overhaul supplies and aircraft accessories were taken to Cairo for distribution among warehouses and little shops operated by natives, or shifted to small, isolated depots in the neighboring desert.[6] Geneifa (Depot No. 107), about 30 miles south of Ismailia, was designated as a dispersal point for spare parts and as a local repair and overhaul station for American-manufactured planes in this district.[7] Until the procurement of more effective means of protection than that provided by a barrage of small balloons, tools and other portable equipment here were buried in the sand at the end of the day and returned to the hangars each morning. Needless to say, such an expedient proved unsatisfactory, for inevitably some materiel was lost in these transfers.[8]

Although the Delta area was used for the assembly of P-40's still being off-loaded from ships in the Suez Canal, Port Sudan, about 300 miles to the south had been selected as the Red Sea base



THE RED SEA AREA

for the erection of crated Tomahawks and Kittyhawks, and deck-loaded Havocs and Bostons.[9] Since, for this purpose, it had been necessary to build hangars and in other ways enlarge facilities there, the erection of P-40's was not begun until the last of August, and that of Bostons, not until several weeks later. About the first of September, a group of Curtiss and Douglas technicians and air crews, along with Allison and Wright representatives, arrived to assist RAF mechanics in this work. In the beginning, progress was slow, because the crews were not yet thoroughly trained, and such equipment as tools, cranes, and electric power was not then available.[10] Since lack of blue prints and technical literature had accounted for much of the trouble experienced by other erection and flight-test crews and engine mechanics, manufacturers' representatives put forth every effort to procure copies of proper tracings, handbooks, and manuals--a practice previously frowned upon by the Air Ministry, for fear that such information would fall into the hands of the enemy.[11] Under the circumstances, the rough assembly-line procedure in use was bringing satisfactory results. For a while, production of P-40's remained at one plane a day, but it was hoped that the daily output would rise to five, within the first month.[12]

Although the RAF mechanics were interested in their work, and were said to maintain a level of morale equal at least to that of the average British soldier, it was found necessary to impress upon them the need for exact workmanship. On account of the short life of the aircraft, they were inclined to feel that the expenditure of much

time and effort was scarcely justifiable. The continuance of such an attitude, it was felt, would seriously affect the safety of the aircraft being assembled.[13]

For necessary modifications, gun synchronization, and further test flights, airplanes assembled at Port Sudan were to be flown to Summit, approximately 60 miles to the southwest, where a camp was then under construction. Here an altitude of 3,000 feet makes the climate more pleasant than that at Port Sudan, which is subject to frequent sand storms and high temperatures for the greater portion of the year. Through a rotation of duties, however, it was planned that each member of the crew would spend a part of his time in the hills. From Summit, aircraft made ready for combat would be forwarded to dispersed storage units near Wadi Halfa or Cairo. The combined use of these two places seemed a logical solution to the need for removing airplanes from the Port Sudan area as quickly as possible, in order to increase security and to minimize the corroding action of the heavily laden salt and dust air.[14]

The establishment of an assembly plant at Port Sudan had been the result of a decision on the part of the British to discontinue the practice of erecting American aircraft in West Africa and ferrying them across the continent. In the future, P-40's and other airplanes that could not be delivered to the Middle East by air would be carried around the Cape of Good Hope and up the Red Sea for assembly in Egypt. Despite the length of the trip around Africa, this policy was believed to have advantages over the plan in effect.

Improvement of the trans-African ferry route and the wider experience of ferrying pilots had brought about a substantial reduction in the number of accidents, yet many planes continued to be wrecked in making the crossing. These crashes were attributed in large measure to the fact that the aircraft were flown from Takoradi to Cairo without any "breaking-in" period. By assembling the airplanes at Port Sudan and flying them the relatively short distance of 900 miles to their operating bases, it was thought that smaller losses would occur.[15]

Although the Middle East RAF Command expected eventually to replace British planes with ones of American manufacture,[16] comparatively few American combat planes had been used in this theater prior to the fall of 1941, and the performance of these had failed to meet with complete satisfaction.[17] During the preceding spring, 10 or 15 Glenn Martins had been employed in medium-range reconnaissance rather than in bombing, because the load of eight 250-lb. bombs, which this plane then carried, was considered insufficient. Alteration of the bomb racks to hold four 500-lb. bombs was subsequently made, while improved communications between pilot and navigator and a reduction in noise were recommended.[18] Owing to lack of ferry pilots and the inadequacy of assembling facilities, only two squadrons of P-40's had been put into operation by June 1941--one in the Western Desert, after having seen service in the Delta area, and the other in Syria and Palestine.[19] In the course of the summer a third had been added.[20] Although the Tomahawk had developed mechanical difficulties and its

inability to attain high altitude had been criticized by the RAF, its performance was obviously superior to that of the Hurricane.[21] After pilots and crews had had some weeks of experience in operating this plane, it gained favor, and by fall the Tomahawk had proved its worth in ground-strafing and anti-tank action.[22] Up to this time, the hit-and-run technique employed by the ME-109's had afforded little opportunity for actual fighting; yet many pilots thought that the P-40 was capable of out-maneuvering the German plane in close combat.[23]

The unpopularity of the Tomahawk among RAF airmen had been due, in large measure, to the fact that the Curtiss plane had reached the Middle East before American personnel were available to give instruction in its erection, operation, and maintenance.[24] As a consequence, the plane had been assembled under difficulties; in the hands of inexperienced pilots, it had developed ground-looping tendencies; and its frequent crashes along the ferry route had given rise to exaggerated rumors concerning the dangers of flying it.[25] Operational instruction, lectures on the machine itself, and the diagnosis of individual problems of pilots helped to dispel much of the initial prejudice. A generous measure of credit for the excellent reputation which the P-40 acquired within a few months was ascribed by Curtiss-Wright representatives to the efforts of the Army Air Corps personnel in this area.[26]

In the supply, maintenance, and repair of American aircraft in the Middle East, the British were faced with a problem of considerable

magnitude--and one in which they looked to the United States for assistance.[27] The situation in regard to spare parts was especially deplorable, since many aircraft were grounded through lack of essential replacements. Failure to ship spare parts with engines and planes, and unusually high consumption of parts due to sand and desert conditions, accounted in large degree for this shortage.[28] Inasmuch as the British Aircraft Commission in Washington was not always cognizant of the requirements of the theater, it was suggested that the liaison officer between this group and the Division of Defense Aid Reports (i.e. lend-lease) sit with the Air Corps Maintenance Command, and be empowered to procure spare parts and to follow shipments through to their destination--a duty that Wing Commander Messiter assumed in the late summer of 1941.[29]

In the theater itself, the supply system was crippled by lack of coordination and a point of central control. As a consequence, supplies often remained unclassified, were delayed in delivery, or lost in the resulting confusion. With the hope of relieving conditions temporarily, American manufacturers' representatives visited various Middle East depots, in order to locate equipment and to arrange for its transfer, for, through lack of information about departures from the United States and arrivals in Africa, shipments in transit were not easily traced. In an attempt to organize supply depots more efficiently and to employ current stocks to greater advantage, these representatives instructed the personnel of stores-centers in the identification of equipment, the use of factory blue-prints, and the establishment of filing systems. For the convenience of repair

units, it was recommended that the list of interchangeable parts used by the Curtiss-Wright Company for Mohawks, Tomahawks, and later Kittyhawks, be procured, and, in the absence of handbooks, the numbering system for parts was explained to mechanics.[30]

In view of the shortage of technicians which would exist with the expansion of operations in the near future, it had been suggested by Mr. Harry L. Hopkins (while he was in the Middle East with the Harriman Mission, in June 1941) that the United States furnish skilled mechanics to this theater. Assistance in such a form would be most welcome to the British, who were handicapped by lack of personnel familiar with American equipment. To the distribution of these men among British workers in widely scattered shops, there was, however, some objection on the part of the Harriman Mission. Arrangements of this sort had already proved unsatisfactory, in that British and American techniques were different; our technicians were inclined to find fault with the British for not having on hand equipment especially designed for the assembly and overhaul of American planes, and quite naturally resented criticism of American products. Moreover, they were prone to contrast the standards of our country under peacetime conditions with those of the Middle East, suffering under the strain of 2 years of war. Since such a state of affairs was harmful to Anglo-American amity, Brig. Gen. Ralph Royce, as a member of the Mission, pointed out the desirability of having the United States assume certain definite tasks rather than subscribe to a general program of assistance.[31]

As a military observer particularly concerned with questions of maintenance, supply, and training, Maj. Gen. George H. Brett, Chief of the Air Corps, expressed a similar view, on his mission to the Middle East in the fall of 1941.[32] His ground for taking this stand was partly the failure of middle-ranking RAF officers to appreciate the importance of American cooperation in the maintenance of British air units. To prevent diversion of personnel and equipment, he therefore considered it essential that American installations be kept entirely within our control. The current practice of pooling American personnel in the Middle East he found advantageous and favored its continuance, because it insured the uniform operation of all projects for which Americans bore responsibility.[33]

These suggestions did not go unheeded. In response to a request from the British, made in the summer of 1941, the United States agreed, under lend-lease arrangements, to establish and operate a base for the complete overhaul of all types of American engines and planes supplied to the Middle East--a project which would greatly increase the quantity and efficiency of such equipment used in this area. The Douglas Aircraft Company was designated by the War Department to carry out this undertaking, and many millions of dollars were set aside for the purpose. Because of the bombings in the Delta and Suez districts, it had already been decided that any such installation must be placed well to the south. Asmara, on the edge of the Eritrean plateau and not far from the port of Massaua, would have been the Douglas Company's choice of location, but, on the strength of General Brett's recommendation, Gura, about 30 miles farther south, was selected

instead. This site had two advantages. Here was situated the former assembly plant of the Caproni company, which had served as the main Italian base for the East African Campaign and had fallen to the British with many facilities still intact. Close at hand lay the Gura airdrome, an Italian-built field used in the air attack upon Ethiopia in 1935.[34]

The development of Gura would make necessary the reopening of the port of Massaua, which was cluttered with ships scuttled by the Italians before their surrender. Having undergone sufficient improvement to serve as a base for destroyers and submarines, this harbor had been equipped with workshops, warehouses, and other installations essential to the maintenance and repair of naval vessels during the period of Italian occupation. In view of the present insecurity of Alexandria and Suez as points of supply, Massaua, at no great distance from the Western Desert battleground, promised to become a center of some importance. From this port, when reconditioned, many tons of equipment would be transported over the 80-odd miles of hard-surfaced mountain road to Gura. Inasmuch as the port, the road, and the depot constituted a single unit, it was suggested that this entire project be administered and supervised in a manner similar to that of the Panama Canal. Under such a plan, full authority would be vested in the American corporation responsible for the construction and operation of these facilities, while the conditions under which it would work and its relationship with the British civil and military authorities would be covered in detail by an agreement then under discussion.[35] Because of the scale of the enterprise and delay in

the procurement of materiel, the limiting date of 2 February 1942 was extended for 2 months (until 2 April 1942).[36]

Inasmuch as the transportation of engines and other large parts by air was an essential factor in this American overhaul scheme, it was also necessary to make provision for transports capable of carrying such cargoes. At the time of the formulation of the Gura plans in the fall of 1941, all transports being sent to the Middle East were usable solely for the movement of troops and small parts. Unless modified to handle engines, or unless airplanes similar to C-39's were substituted, even large numbers of these transport aircraft would prove wholly inadequate. In order to simplify the maintenance and repair problem, it was later suggested that Douglas planes of the same type be sent to this area.[37]

While these plans for a general overhaul depot were taking shape, first and second maintenance had been organized fairly successfully in Egypt. In fact, when General Brett arrived in the Middle East in the early autumn, he found that RAF personnel needed only limited supervision from factory representatives and our enlisted men serving as instructors in the theater. Additional tutelage would enable them to assume full responsibility--a circumstance which strengthened the conviction that the British should replace American personnel as soon as they were qualified by training to do so.[38]

Third echelon maintenance, however, remained to be put into working order. Although detailed plans for such service could not be made until the British had fixed the importance of the Middle East

theater in relation to their total war effort, it was obvious that the shortage of equipment would require the attention of American personnel for some time. As a partial solution to the problem, General Brett suggested that a mobile depot be established at the head of the Nile Delta, and that a small group of civilians capable of teaching its use be dispatched to Egypt at once, with the understanding that the British take over the depot whenever their staff had acquired sufficient familiarity with it. Although these arrangements would provide for current needs, it was understood that they would in no way take the place of establishments in depth essential to a sustained campaign.[39] Appreciating the inability of the United States to carry out simultaneously all the Middle East projects requested by the British, the Air Ministry, in October, concurred in General Brett's recommendation that priority should be given first to Gura, and second, to the mobile depot in the Delta area.[40] As a more immediate measure, General Brett proposed that complete groups of mobile repair trucks, each in charge of an Air Corps noncommissioned officer, be sent to the Middle East for the purpose of testing their serviceability with the Royal Air Force.[41]

Americans had already undertaken instruction of the British in the operation and maintenance of American aircraft, and it was planned that this effort be continued with the introduction of each new type of plane, an enterprise in which both Air Corps officers and enlisted men would participate.[42] With a view to furthering the self-sufficiency of the RAF, General Brett sought to enlarge and coordinate

this program by proposing the establishment of a technical school, for which all American personnel in the area would be available as instructors. He was disappointed at finding that representatives of American manufacturing concerns had been employed largely as individual consultants on emergency problems, and that little systematic effort had been made to use them for technical instruction. Inasmuch as all AAF personnel on duty in the theater had been constituted the American Air Force Delegation in the Middle East early in September, he asked that aircraft companies place their representatives under the direction of this delegation. While permitting continuance of their regular duties, such an arrangement, he felt, would facilitate their effective employment in an enlarged training program.[43]

According to plans developed after repeated conferences with Air Marshals Tedder and Dawson, the RAF would furnish ground and physical equipment for the school and establish policies for the selection of its students, while the Air Corps would provide supervision and management and draw up courses of instruction. With General Arnold's approval, arrangements were completed. Failure to find a suitable location in the neighborhood of Cairo finally led, in November, to the choice of Ismailia as a site for the school. The curriculum as a whole fell into four major divisions--maintenance, repair, equipment, and supplies--with detailed instruction offered in each of these branches. Since it was understood that from time to time the commanding officer of the school should select adequately trained students to replace the American military and civilian instructors, the plan

envisioned ultimately an institution operated and maintained by the RAF.[44] With the sending of Majs. Steward Morgan, Sory Smith, and Albert Wilson, and four enlisted men to Egypt to assist in the organization of the school, the project began to take shape late in the fall of 1941.[45]

Despite the fact that General Brett was obliged by the nature of his mission to devote much of his attention to questions of maintenance and supply in the Middle East, he nevertheless found opportunity to study the movements of the British Eighth Army, then under the command of Gen. Claude Auchinleck. Although its engagements at the time were by no means spectacular, they proved of interest to American observers in that they illustrated the functions of the tactical air force, a new combat unit which had grown out of the experience of the RAF in the Western Desert. Its existence, in turn, had made possible the integration of air and ground forces, a form of collaboration that was to expand as the North African campaign progressed.[46] Struck by the significance of this new tactical development, General Brett had requested the Air Force Combat Command to send small groups of officers to report on this type of operation--one officer for operational liaison in Middle East Headquarters, another for bomber operations, and a third for fighter operations--assignments which, in themselves, reflected the organization of Air Marshal Tedder's Western Desert Command. After a period of 2 months, each was to be replaced, in order that the Air Corps might make the widest possible use of this opportunity.[47]

That other recommendations of General Brett might be carried out was suggested early in the fall of 1941 by the issuance of a presidential directive to the Secretary of War, authorizing the formation of a military mission to the Middle East.[48] Designated as the United States Military North African Mission and headed by Brig. Gen. Russell H. Maxwell, this organization was intended to further the supply and maintenance of American equipment for the theater. It was also expected that the mission would make local investigations related to projects which the United States then had under consideration as possible forms of aid to the British. Most of these "tasks" had been recommended on behalf of the British Admiralty, the War Office, and the Air Ministry, after discussions with Mr. Hopkins, Mr. Harriman, and representatives of the British Government in July of that year.[49] To this program the first substantial American contribution would be the repair and maintenance facilities for the depot at Gura. Because of the magnitude of this undertaking, it was thought that, from the approximate 100 officers and enlisted men allotted to the Mission proper, the number of personnel would be expanded to four or five thousand within a few months.[50]

With the establishment of the United States Military North African Mission, it had been decided that in the Middle East all Air Corps personnel, except those on diplomatic status (i.e., attaches, assistant attaches, and observers attached to the Embassy), should constitute part of a Special Observers group and should report to General Maxwell upon reaching Cairo.[51] In accordance with a policy

adopted some months before, that all air observers going to Egypt should have some knowledge of the production and experimental programs of the Army Air Corps, it had been stipulated that they should spend at least 48 hours at Wright Field prior to their departure.[52] The desirability of giving them a fuller appreciation of the problems at hand had also prompted the suggestion that they be schooled in the joint relationship existing between the United States and Great Britain, as evinced by White House policies. Since in all probability tutelage of this kind could be accomplished most successfully through Air Corps agencies, it was thought that supplementary information about local conditions, the practices of various divisions, etc. could then be furnished to new arrivals by some Air Corps officer in the Middle East. In this way, it was hoped that a good deal of mutual criticism and misunderstanding between American and British personnel might be avoided.[53]

The arrival of the North African Mission in Cairo would provide the War Department with machinery for carrying on its vastly increased business in the Middle East. In former years the Military Intelligence Division had been called upon to handle various administrative matters for United States war agencies abroad, and in most capitals the aggregate of such work was still not too great to be borne in this way. In Egypt, however, the exigencies of the current emergency had so multiplied these duties that decentralization of administrative personnel had been under consideration for some time.[54] In fact, the

move on the part of the Air Corps to provide more effective coordination of effort through the American Air Force Delegation in the Middle East was indicative of an administrative need increasingly felt by the fall of 1941.[55] At the outset it had been possible to clear most administrative matters through the military attaché at Cairo and to handle certain technical questions by reliance upon General Chaney's mission, which had been functioning in London since May.[56] Particular problems had been met by the dispatch of officers or other specialists for the purpose. The last practice of course had some advantages over a staff permanently located in the theater, in that field experts naturally tended to lose touch with conditions at home.[57] The growing importance of air power in the Middle East and the RAF's increasing employment of American aeronautical equipment, however, led General Brett early in October to urge the appointment of an air attaché to Cairo, with a staff paralleling the Air Staff of the War Department. If full assistance were to be rendered to the British, he considered it essential that the Air Corps have there an effective organization familiar with the operational needs of the theater.[58] In order that these matters might be studied more carefully in the field, he suggested the sending of a military air mission to the Middle East.[59] By the time that these recommendations reached Washington, the military mission to that theater had already been authorized by presidential directive, and the plan of an air section within the mission was followed instead.[60] Brig. Gen. Elmer E. Adler was appointed Chief of the Air Section, and also named as Air Representative of the AAF in the Middle East.[61]

Before the departure of the North African Mission, however, the urgency of the situation on the Eastern European front led to the recommendation that the Air Section be withdrawn and a separate air mission be established in its place.[62] The reasons were these. When the British and American projects for the development of the Red Sea area were begun in the summer of 1941, these enterprises were linked with a similar program for the opening of a new and vital supply line to the Soviet Union.[63] From the head of the Persian Gulf, and across Iran, was to run the Middle East equivalent of the Burma Road--a combined rail and truck route, over which war materiel could be carried beyond the Caucasus to the Soviet fronts. Included in this general scheme were plans for the expansion of the port of Khorramshahr,[64] improvement of roads, enlargement of airfields, and the building of a depot at which American-manufactured planes would be assembled and made ready for delivery to representatives of the Soviet Government. Because of the strategic importance of these undertakings, it was necessary to take measures for the guarantee of their safety. In order to make certain that Iran, which swarmed with German agents, did not fall into the hands of the Axis, British and Soviet troops jointly occupied the country toward the last of August 1941. The abdication of the Shah in favor of his son resulted in the dismissal of Nazi advisers, and in the establishment of a government sympathetic to the Allied cause.

Before the end of November 1941 the United States Military Iranian Mission, under the direction of Brig. Gen. Raymond A. Wheeler,

reached the Middle East to supervise the development of the Persian Gulf area.[65] The United States Military North African Mission had been instructed to render him all possible assistance. It was the absence of an air section in the Iranian Mission, together with the prospect that Far Eastern developments might soon broaden still further the responsibilities of General Adler and his staff, which had prompted the recommendation for a separate air mission. The imminent arrival of the Air Section in Cairo, with definite plans and means sufficient for their implementation, had also given rise to the fear that its progress might be retarded by the somewhat slower operation to which the North African Mission as a whole might be committed through its need for making exploratory investigations. The proposed dissociation of the two organizations called forth opposition, however, on the ground that their general functions were so interdependent that a common head was considered essential. Inasmuch as General Adler's assignment was a detailed one with the North African Mission, there was reason to suppose that the connection of the Air Section with the Iranian Mission would consist largely in his acting in an advisory capacity to General Wheeler. Moreover, it was thought that the assembly of aircraft in this area probably would entail such extensive duties that a competent air officer would of necessity be added to General Wheeler's staff within a short time.[66] These arguments prevailed, and American air interests in the Middle East therefore remained vested in the Air Section of the United States Military North African Mission until June of the following year. It was pointed out at the time that,

in the event of the development of an American theater in the Middle East, General Adler's Air Section should come under the commanding general of the United States air force in that theater.[67]

General Maxwell was expected in Cairo about 20 November; General Adler and other members of his staff began to arrive about the same date. By the 10th of December the Mission included 25 officers representative of the Air Corps, Infantry, Corps of Engineers, Signal Corps, Medical Corps, and Ordnance, and had in addition 23 enlisted men and 11 civilians, exclusive of contractors' personnel.[68] In matters pertaining to the supply and maintenance of air equipment in the Middle East, responsibility rested upon the Chief of the Army Air Forces, acting through the head of the North African Mission. Actually, however, direction of air matters was in the hands of General Adler, whose duties were connected both with the Air Section and with the North African Mission proper.[69] With the assistance of a group of able officers, among whom were Majs. Reuben C. Hood, Robert C. Oliver, Daniel F. Callahan, Sory Smith, Albert T. Wilson, and John DesIslets, it was his task to establish and set in motion maintenance and supply facilities which could be turned over to the British at the earliest practicable date. In view of the important influence that recommendations from the mission might have upon the future development of the AAF itself, care was taken to include on General Adler's staff men well versed in the logistical, tactical, and strategical phases of air operations.[70]

Soon after his arrival in Cairo, General Adler got in touch with General Wheeler, who had already begun work in the Persian Gulf area.

Since the northern route to the U.S.S.R. was subject to increasing hazards and might well be closed by ice during the winter months, it was probable that a heavy burden would soon be placed upon this southern line of supply. Originally Basra had been selected as the point of assembly for American aircraft being furnished to the Soviet Government. After reconnaissance of the district, however, it was agreed that Abadan would prove a better location.[71] Since adequate facilities could not be established here before spring, temporary arrangements were made with the British for the erection of American-manufactured planes at their depots in the vicinity of Basra.[72] In order to assist the RAF in this work, a group of test pilots, enlisted men, and Douglas mechanics was to be sent by air from American headquarters in Cairo, and visits from General Adler and his chief engineer would be paid to insure coordination of effort. Upon completion of installations and the arrival of American mechanics, the assembly point would then be shifted to Abadan, where the Douglas Aircraft Company would assume responsibility for the operation of the plant.[73] Although this organization would serve under the administrative control of the Wheeler Mission, it was to be subject, in technical matters, to the jurisdiction of the Air Section of the Maxwell Mission. In carrying out the delivery of aircraft to representatives of the Soviet Government, it was arranged that the Wheeler Mission should act as the United States agent, and that actual transfer should take place at the point of assembly, and not at Teheran as at first planned. From Basra or Abadan, as the case might be, Soviet pilots would then fly the planes northward to bases within the boundaries of

their own country.[74]

The increased flow of aircraft that these plans represented would be of great help to the people of the Soviet Union, for months of hard fighting had made replacements a matter of growing urgency.[75] With their western industrial area overrun and their resources steadily depleted by loss of territory, they found themselves unable to produce vast stores of specialized equipment. Although factories had been opened in the region of the Urals and beyond, these new centers were still operating on a limited scale. If resistance were to be continued, the Soviet Union obviously would be forced to rely upon outside help--at least until the reconstruction of its industrial system had been completed. Large shipments to that country would, of necessity, postpone the delivery of heavy equipment and long-range bombers so essential to future British operations; yet both Mr. Roosevelt and Mr. Churchill recognized the importance of meeting the requirements of the Soviet Government. It was, however, clear that even the greatest generosity in diversion could insure but limited supplies, for the United States and Great Britain were still straining to overtake their own needs.

By the end of November 1941, the situation on the Eastern European front was critical indeed. With Crimean defenses broken through and the railroad center of Rostov temporarily in German hands,[76] the Caucasus loomed as a possible objective. In the face of stiffening Soviet resistance, such a step was not to be taken without deliberation, for Turkey's attitude was uncertain and a thrust to the southeast would lengthen Germany's lines of communication, which were already

far-flung. While the matter hung in the balance, the Japanese attack upon Pearl Harbor, on 7 December, not only opened up a new theater of operations but precipitated the United States into a conflict now global in character. Four days later, by formal declaration of war issued against us, we found ourselves opposed by Germany and Italy too. Actually, in the Middle East, we had been engaged in the struggle against these two Axis powers for some months.

That the United States should assume in North Africa obligations other than those entailed in accelerating the flow of lend-lease supplies to the British, and in rendering them technical assistance in the maintenance and repair of American-manufactured equipment, apparently was not seriously contemplated in the early part of December 1941. In fact, for two reasons, the development of an American theater of operations there seemed rather unlikely. In the first place, the Middle East was looked upon largely as a responsibility of the British, and, in the second place, the defense of the Far East was then regarded of greater urgency. With every effort being made to send reinforcements to her beleaguered islands in the Pacific, the United States found herself in no position to undertake new enterprises. Yet the possibility of such a step could not be lost sight of entirely.[77] The Libyan offensive launched by the British in November was progressing satisfactorily, but it was obvious that the demand for men and arms created by the outbreak of war in the Pacific would require the withdrawal of British forces and equipment from the Mediterranean area. Moreover, the danger of a Soviet collapse, and

the disastrous effect that such a debacle would have on the Middle East, could not be ignored. Thus, by its very nature, the war raised for the United States the question of additional commitments in the Middle East.

For actual participation in the war in North Africa, the United States was, in one sense, not wholly unprepared. In the course of the preceding months, an American military attache had been established in Cairo; British requests for technical assistants had brought to Egypt skilled mechanics, members of the Army Air Corps, and manufacturers representatives; coordination of lend-lease efforts had led to the opening of a Defense Aid Office in Cairo; the delivery of planes to the Egyptian front had necessitated the development of the trans-African ferry route, and to the training of scores of pilots to fly it; United States engineers were busily engaged in deepening harbors, expanding railroads, and building highways; and the Maxwell and Wheeler missions had already taken up their respective duties in the North African and Persian Gulf areas. For the testing of American-manufactured equipment, the Western Desert had proved a veritable laboratory; Air Corps observers had profited by following the operations of the RAF there; and the operational requirements of the theater had been carefully studied by scores of experts connected with the special missions that had been dispatched to the Middle East for various purposes. As a result of this activity, reports of all kinds flowed from these channels to War Department offices, so that there was being built up a fund of information, as well as a body of experienced men, which could be drawn upon in the future.

Since distances were great and shipping was at a premium, any active American participation in the war on this front would probably be in the nature of air operations. For the basing of an American air force in North Africa, the first suggestions had been offered, not in direct connection with the defense of the Middle East, but rather indirectly, with the prospect of establishing there a striking arm for offensive operations against Europe. As early as April 1941, Major Fellers, the American Military Attache in Cairo, had pointed out the menace that such a possibility presented to the Axis as long as the Allies continued to hold bases on the southern and eastern shores of the Mediterranean.[78] In September, with the war some months nearer, the United States was deeply concerned over the question of the availability of bases. In the event that American national policy should necessitate offensive air operations against Axis powers in Europe, there was indication from surveys already made that the British Isles did not provide a sufficient number of airdromes to accommodate contemplated British and American air units. From the standpoint of area, the Middle East undoubtedly would afford adequate bases, but the lack of water and the maintenance of lines of communication imposed such great difficulties that the operation of an extensive air force from this region then seemed almost out of the question.[79] In the field, a more thorough examination of these matters was made by General Brett within the next month. For the operation of various types of American aircraft, he considered regional conditions most favorable there. For B-24's, there were distant targets well within their range; light and medium bombers

would lend themselves to cooperative operations in the Western Desert; and pursuit planes could be used advantageously for patrols and other kinds of duty. He granted that the logistical and maintenance problems were perplexing, but believed that neither presented obstacles too great to be overcome with careful planning.[80]

In the organization of the British Army, however, he found a situation to which he felt that thoughtful consideration should be given. Owing, at the time, to lack of central control and the absence of a theater commander, he feared that the British chain of command would prove indefinite and therefore might result in confusion. Such a state of affairs would hamper the effectiveness of any common endeavor--a matter that had begun to receive attention soon after the turn of the year, when it became obvious that the United States might be drawn into the European war. If, by way of assistance, reinforcements were to be sent to the RAF in Egypt, it was considered extremely desirable that such air units operate under their own officers and staff, as an integral part of an American command. However, in a common theater such as North Africa, where coordination and control both of RAF and AAF contingents would be essential, it was thought that a satisfactory working basis could be achieved through joint action of the headquarters of each air force. According to the plan envisioned, this joint command would control the tactical operations of both air forces, but administrative matters would be handled by the individual headquarters to which the units belonged. In order to

fit lesser United States air groups into the RAF system, a similar arrangement would be used in fighter, bomber, and other types of command.[81]

It was considerations such as these that had led General Brett to recommend the sending of a military air mission to the Middle East, to study the theater as a whole, and sectors of operation in particular. If the United States entertained any idea of participating in the war on this front, he urged that special attention be given to objectives. He suggested that all planning should be based on the utilization of any American contingent as an individual air force. For the avoidance of future difficulties, he advised that a definite understanding be reached as to its employment as an expeditionary force, rather than as a part of the RAF--a position for which General Pershing's insistence upon an American army in France during World War I had furnished a precedent.[82] With all United States units under American control, General Brett advocated definite and separate allocation of port facilities, supply lines, and airdromes. Such an arrangement not only would relieve the British of heavy responsibilities but also would facilitate the flow of supplies.[83]

By way of following up some of these recommendations of General Brett, the Air Section of the Maxwell Mission had undertaken a study of British effort, with a view to seeing what could be done in making preliminary organizational plans for possible operations in that theater. As the days passed, there was a growing feeling that the Middle East would play an increasingly important part in the general

strategy of the war, and that eventually an American air force would be located there.

Useful as were these activities of the Air Section of the Mission, its principal function consisted in furthering the general purpose of lend-lease by facilitating the flow of supplies and by establishing the technical schools and depots which had already been planned.[84] Almost before this program could be begun, however, General Adler and his staff were faced with the even more pressing problem of helping to build up the trans-African ferry route and its recent extensions to the East.[85] The outbreak of war in the Pacific had made the sending of supplies and equipment to the Orient a matter of the greatest urgency. Shipment by air was the only means by which materiel could reach the Philippines and Australia in time to be of any service. Yet attacks upon the islands of Midway and Wake, and the strategic location of Japanese-controlled islands in the Central Pacific, had closed effectively this airway to the Philippines, while the projected route across the South Pacific by way of Hawaii, Christmas and Canton islands, the Fijis, New Caledonia, and Australia had not yet been completed. The only hope of immediate supply therefore lay in flying materiel across Africa, and thence to India, Sumatra, Java, and Australia--a route stretching two-thirds of the way around the world.[86]

Although an increasing number of smaller aircraft was being flown across Africa by Pan American Air Ferries Inc., the route was scarcely sufficiently developed for the use of heavy bombers and large transports.

Many of the airfields were inadequate, and the initial stocks of fuel were low.[87] Despite these limitations--and a lack of spare parts that at first grounded a large proportion of the planes en route--the Air Corps Ferrying Command succeeded in sending a thin trickle of reinforcements to the East.[88] To Rangoon, the command's flyers rushed supplies for the First American Volunteer Group, who were guarding the Burma Road. Under cover of clouds, darkness, and bad weather, they shuttled into Java and Burma, carrying to these fronts equipment and munitions, of which at least a part had been borne across the trans- African ferry lane.[89] Over the route, too, came Liberators, Flying Fortresses, and crews for the 7th and 19th Bombardment Groups, operating within the ABDA Command in defense of the Netherlands East Indies.[90] For tactical units whose training had been designed to equip them for combat rather than for coping with the various types of problems peculiar to transcontinental and transoceanic flights, the Ferrying Command often furnished convoy planes manned with their own crews. Owing to the serious lack of equipment along the routes still under development, they also flew a number of combat planes to key points like Cairo, where these aircraft were used as a source of spare parts, both for airplanes operating in the theater and for those flying across Africa on their way to the East.[91]

In the face of intensified enemy threats to the Dutch East Indies, attention had been directed in January to the possibility of constructing an air route running from Ascension Island, in a general easterly direction across Africa and the Indian Ocean to the British-

held islands of Coetivy, Diego Garcia, and Cocos, and thence to Port Hedland in Western Australia. These plans included the development of Pointe Noire in French Equatorial Africa as a port of entry, with Leopoldville and Bukama in the Belgian Congo, Mbeya in Tanganyika, and Mombasa in Kenya, serving as stations on what appeared to be the most feasible route across the continent.[92] Before an initial survey of the Indian Ocean section of the proposed airway had been concluded, however, the Japanese had overrun the entire Netherlands East Indies late in February, thus cutting into the former ferry route through Sumatra and Java and putting themselves in a position to threaten the security of any air lane across the Indian Ocean. As soon as it was learned that the islands could not be defended, all idea of the route was abandoned.[93] In a somewhat different form, plans for the African portion of it were revived in the spring. At that time the prospect of a German offensive in Libya and the danger of enemy attacks upon French West Africa emphasized the vulnerability of the trans-African ferry route and showed the need of having a second, or alternate, route across the continent.[94]

Although the occupation of Java and Sumatra had severed their aerial lifeline to the west, the units which had withdrawn with General Brett to Australia were not entirely cut off from the United States by air, for on 6 January 1942 the ferry route across the South Pacific had been opened by the inaugural flight of three B-17's.[95] For India and China, however, the Japanese thrust had greater significance. The only hope of sending airborne supplies and equipment from the

United States to General Chennault's Flying Tigers operating in southern China and Burma, and the nuclear Tenth Air Force which Maj. Gen. Lewis H. Brereton was building from the small group of men who had come with him from Java to India, now depended solely upon the maintenance of the trans-African ferry route.[96] Along this artery also flowed a stream of war supplies which were helping to stiffen Soviet resistance on the Eastern European front.[97]

This turn of events had directed increased attention toward the Middle East. Its relative importance to the general war effort was no longer a matter of opinion, for its commanding position on the supply lines to the Soviet and India-Burma-China theaters amply demonstrated the necessity of holding this region. Since the security of the area depended upon the adequacy of its air power, immediate reinforcement of the RAF Middle East Command was imperative. With this end in view, Sir Charles Portal, in conversation with General Arnold at the beginning of 1942, had asked that two American pursuit groups be sent to this theater at the earliest practicable date. Such a plan had much to recommend it. Not only would British military control of the Egyptian district be strengthened, but our squadrons would acquire valuable training in the coordination of air and ground efforts--a type of experience that would prove most useful, if in the future the United States wished to employ bombardment units in the locality.[98]

In anticipation of such a possibility, tentative plans were outlined for a United States air force, which would operate there, and, under the Air Force Combat Command, the organization and training of

its potential bomber and pursuit groups was begun. In order that the situation in the Middle East might be studied at closer range, the Air Force Combat Command also was directed to establish, at once, small headquarters for interceptor, bomber, and air service commands, from which it would be possible to select a limited number of men for assignment to Egypt. Under these circumstances, especially heavy responsibilities would fall upon the air service command, for its personnel were expected to formulate plans and make preparations essential to the movement, employment, and supply of any air units allocated to the Middle East.[99] In accordance with these decisions, General Adler was informed before the end of January that the transformation of the Air Section of the North African Mission into an air service command functioning under his direction was contemplated--provided of course that General Maxwell and General Wheeler concurred in the plan. If the change were effected, General Adler would still serve as Air Representative to the Mission, but in air matters it was expected that he would act independently.[100] When these arrangements were made, it was also determined that any air units dispatched to the Middle East should be organized into a single air force and placed under the command of a general officer of the Air Corps. He, in turn, would operate initially under the strategic direction of the senior British commander in the theater. In the absence of such an officer, he would collaborate with the three senior British commanders, on a basis of equality. If, on the other hand, an American theater commander were appointed, he would of course operate within the command

of the latter instead.[101]

Initially, however, it was agreed that this potential air force in the Middle East should consist of TASK FORCE CAIRO, composed, for planning purposes at least, of the 58th and 78th Pursuit Groups, together with one transport and one air depot group, and essential ground services.[102] In respect to both personnel and equipment, the organization was given a high priority; yet, on account of previous commitments, it seemed extremely unlikely that the two groups of P-47B's (Thunderbolts) allotted to it would be fully equipped before June. Only one means of placing pursuit units in the Middle East at an earlier date presented itself--the reassignment of two P-40F groups destined for North Ireland. This proposal, whereby the first two pursuit groups ready for shipment overseas should be diverted to Egypt, won strong support from the British Chiefs of Staff, in that the suggested change would meet a critical need for fighters in an operational theater suffering from recent transfers of aircraft to the Far East. The arrangement was therefore agreed upon, and a preliminary estimate of the necessary men and airplanes was made. Despite the fact that the composition of the task force presupposed its employment in a region where antiaircraft artillery and ground defenses would be furnished by the British, these figures showed that the two pursuit groups, with interceptor command headquarters and necessary Air Corps and allied services, would represent a total of more than 10,600 men. A complement of 181 aircraft and a reserve of 90 planes for replacements were considered initial requirements for operational

purposes. In order to provide for housing and other necessary facilities, it was thought highly desirable that command and service elements should precede combat units by 6 weeks at least.[103]

Meanwhile, Japanese advances in the Pacific and the uncertain trend of Middle Eastern affairs had led Air Marshal Portal, in mid-January, to suggest that as soon as possible the United States send heavy bombardment units to reinforce the Cairo district. Because of the timeliness of the request, it was decided that an initial augmentation of TASK FORCE CAIRO by one bombardment group should receive serious consideration. To the diversion of any units from the task force for the British Isles, which was scheduled to move soon after 1 March 1942, objections were raised, on the grounds that a change of this sort would weaken TASK FORCE BRITAIN, and that the dispatch of a heavy bombardment unit to Egypt in advance of pursuit groups would be inadvisable from the standpoint of balance.[104] By the middle of February, however, the British situation in both the Asiatic and Mediterranean sectors was indeed grave. Burma had been invaded and was being fast overrun; the great port of Singapore had surrendered; and in North Africa the forces which had succeeded in driving Marshal Rommel to El Agheila, on the borders of Tripolitania, had fallen back upon a line of defense running south from the vicinity of Tobruk.[105] In the face of these disasters, the British Chiefs of Staff submitted, toward the end of February, a proposed "Policy for the Disposition of United States and British Air Forces," extending the scope of help which the United States would contribute. With the hope of finding means for enlarging TASK FORCE CAIRO and hastening

its departure, it was therefore decided that plans for the establishment of an American air force in Egypt should be reviewed.[106]

In March a revision of plan was presented. Upon analysis, the table of production had shown that the request for reinforcements in the Cairo area could not be met without disruption of the United States schedule of commitments and detriment to the American training program. Under the circumstances, deliveries to the British therefore represented the only source from which diversions to the Middle East could come--a course of action strongly supported by a cabled message from the Prime Minister to the President, in which Mr. Churchill reviewed the current strategic situation.[107] If, however, the British were able to provide aircraft for such reinforcement groups, it would be possible for the United States to make available the required personnel, at least partially trained and organized into AAF operational units. In view of these facts, the revised plan proposed the establishment of a task force composed of two pursuit groups, two light and one medium bombardment groups, an air force headquarters, and necessary services. The aircraft for this organization were to be procured from British allocations and would be furnished throughout with British armament and accessories. After a brief period of training in the United States, the entire task force, together with its aeronautical equipment, would then be forwarded to Egypt. If this proposal met with approval, and shipping were immediately available, it was thought that the American units could be made ready for embarkation within a short time.[108]

For the present, maintenance, supplies, and replacements resulting from attrition would have to be furnished by the British. Because of the prevailing shortage in types of aircraft needed for this theater, it was strongly recommended that an effort be made to restore to operational status a reasonable number of the airplanes then out of commission.[109] Doubtless this step would do much toward relieving the demand for reinforcements. If, however, the sending of additional specialists would facilitate work of this kind, the United States was willing to dispatch them at once.[110]

While ways and means were being found to give enlarged support to the British military effort in North Africa, American attention became focused on the India-Burma-China theater, where the war was not going well. After the fall of Singapore in February, a regrouping of forces had enabled the enemy to concentrate on a drive into Burma. By 7 March, the success of this thrust made necessary the evacuation of Rangoon--a step which involved not only the loss of a port, but the closing of the lower portion of the Burma Road as well. Yet so acute was China's necessity and so vital to Allied strategy was her continued resistance that, despite the difficulties, plans for the establishment of an air cargo service between Sadiya (near Dinjan) and Kunming were undertaken almost immediately.[111] Initial operations were begun in April with the help of 10 DC-3's borrowed from PAA's trans-African run for the special mission of transporting to China supplies of gasoline and oil that were to be used by General Doolittle's flyers, in their projected flight from China to India, after the bombing of Tokyo.[112]

This was not the only instance in which the India-Burma-China theater looked to the Middle East for assistance. When the emergency resulting from the collapse of the ABDA Command made necessary the organization of an air force based in India for immediate operations against the Bay of Bengal, Burma, and China, General Wheeler was ordered from Iran to India, where his efforts were directed first toward enlargement of the port facilities at Karachi, and later toward making arrangement for the supply of American forces expected there.[113] In shaping his plans for the establishment of the service command of the Tenth Air Force, Maj. Gen. Lewis H. Brereton also drew upon the Middle East. Soon after his arrival in India late in February, he requested the assignment of General Adler and several of his assistants to the India-Burma-China theater. Their transfer could not be effected at once, but General Adler, who was then in India on business, remained for another 10 days to give advice and assistance.[114] Since the approach of the monsoon season emphasized the need for haste, strenuous efforts were made by the Air Section of the Maxwell Mission to assemble information and formulate plans which might prove helpful to General Brereton.[115] It was not until 26 April that General Adler arrived in India to head the Air Service Command of the Tenth Air Force. With him, from the Middle East, came Col. Reuben C. Hood, who was to serve as chief of the Supply Division, and Capt. Gwen Atkinson, who acted as aide-de-camp. About a month later, they were joined by two other members of General Adler's former staff--Lt. Col. Daniel F. Callahan, who took charge of the Maintenance and

Repair Division, and Col. Robert C. Oliver, who became General Adler's chief of staff.[116] Already the experience which the Air Section of the North African Mission had acquired during the previous months was being put to good use.

For the increased traffic which was now to pass along the ferry route to the Far East, existing logistical arrangements were considered inadequate, although from bases established by the Maxwell and Wheeler missions, it was thought that suitable support of this kind could be furnished for Africa and the Middle East. Upon the assignment of Col. William H. Crom as replacement for General Adler, it was therefore decided that, in coordination with the North African Mission, a separate air service command would be organized, with headquarters in Cairo.[117] Inasmuch as there were no immediate plans for the sending of troops to the Middle East, the designation of this area as an American theater was not contemplated at the time.[118] Meanwhile, as aircraft reinforcements were sent to this new theater of operations, ground crews at the various stations along the trans-African ferry route serviced the planes in transit, overhauling ones that otherwise would have been unable to continue on their way, repairing others that could be patched, and salvaging those wrecked beyond repair.[119] In April, PAA pilots on duty in Africa aided in the delivery of 50 P-40E's erected at Takoradi and flown across the desert to Dinjan, and thence to Kunming for the AVG, who were then very much engaged in Burma and badly in need of new planes.[120]

Although by no means isolated instances, these examples are indicative of a feeling of mutual reliance that was developing between the Middle Eastern and Asiatic theaters--a state of affairs which was reflected in a Combined Chiefs of Staff policy of considering the two as interdependent.[121]

While plans for the expansion of the Tenth Air Force were being laid and means for the implementation of TASK FORCE CAIRO were sought, American support of the British effort in North Africa had continued much as before. Colonel Crom, who not only assumed responsibility for the organization of the Air Service Command but also acted in an advisory capacity on air matters for the North African Military Mission, found himself confronted with many of the same problems--lack of spare parts, the difficulty of maintaining aircraft under desert conditions, the shortage of tools, need for the extension of facilities, and an inadequate number of personnel.[122] The situation during the past months had brought out most forcibly the necessity of setting up an effective maintenance system before undertaking operations in a theater.[123] Conditions were gradually improving, however, and the practical assistance which the United States had been able to furnish was beginning to show results. The RAF had gained a good deal of experience in the servicing and maintenance of American-manufactured equipment, and shortages were becoming less pronounced, as its supply stores slowly built up more complete stocks.[124] In order to make sure that dispersed supplies and spare parts could be located and put to good use at once, the RAF had established a control system, and was

careful to salvage disabled planes and to make the most of usable parts. These improved conditions were reflected in the number of aircraft completely overhauled or rebuilt. Over a period of 6 months the total was 1035, with figures rising from 102 for November 1941 to 247 for April 1942.[125]

Because of the size of the RAF undertaking and the comparatively small number of American technical advisors, it was difficult to estimate the value or amount of help that the United States had contributed to the RAF maintenance system. Manufacturers' representatives had been most useful in diagnosing mechanical troubles, in giving advice on the assembly of planes and designs for special tools, and in keeping their companies in touch with developments in the theater. The Air Section of the North African Mission had also rendered valuable assistance. In the opinion of some members of this Section, its main contribution consisted in expediting the flow of technical information from the United States and disseminating that which accumulated in office files.[126]

More tangible evidence of its work was to be seen in the progress of the American Technical School, which had now been running for several months. In the beginning, the registration was small, but so rapid had been the rise in attendance that its initial capacity of 73 students had been increased to 124 at the end of the first few weeks. According to the policy of selection outlined by the RAF, students from units undergoing operational training were assigned to the school prior to entering combat zones. Since it was not

always possible to follow this plan, selections sometimes were made from groups already engaged in hostilities. As a consequence, students often were withdrawn before completion of their courses of study, or were unable to report at all, on account of the sudden employment of their units in tactical operations. Also, unpredictable demands on transportation for higher priorities had, on occasion, delayed their movement or prevented their coming. Despite these handicaps, the enrollment had continued to rise. Inasmuch as a sufficient number of well-trained students were now available as instructors, Colonel Crom cabled early in May that the school had been turned over to the British, in compliance with the original plan.[127]

Although few American maintenance resources were yet available, the depot at Gura was reported well advanced by the beginning of May. In the forward area, accumulation of aircraft and component parts in need of repair indicated that heavy demands would be made upon its resources, as soon as operations were begun. Arrangements for a regular water route between Suez and Massaua were undertaken, but the main burden obviously would fall upon air transport. According to the original plan, the United States had been expected to furnish a transport squadron for the purpose, but in the face of greater necessity this commitment was canceled in May. With the cooperation of Brig. Gen. Shepler W. FitzGerald, who was soon to take charge of the affairs of the Ferrying Command in Africa and the Middle East, transportation by this organization would be provided instead.[128]

The Abadan project, too, had progressed satisfactorily and, unless some unforeseen complication should arise, there was reason to

suppose that all its facilities would be ready for use upon the arrival of Douglas personnel in June.[129] In the meantime, General Adler and his chief engineer at Basra had paid frequent visits to the plant and had done what they could to further coordination of effort. Already operations on a limited scale were being carried on by a detachment of the RAF. As soon as the Abadan plant could operate under its own personnel, these men would be released to aid in the development of their own repair and maintenance depots in the Middle East.[130] In the emergency the RAF had proved most helpful indeed, for more than 400 of its mechanics had had a part in erecting, at Basra, Boston aircraft shipped by water and destined for the Soviet Union. Inasmuch as only a small group of test pilots, enlisted men, and Douglas mechanics, from American headquarters in Cairo, had been available when the first of these planes reached the Persian Gulf area toward the close of January 1942, the terms of the contract under which the aircraft were being delivered to the Soviet Government could not have been met without their assistance.[131]

By the middle of April 1942, 60 Boston 3's and 20 A-20C's had been sent to Iran. On the whole, these aircraft had been assembled with comparatively little difficulty, although, on account of the diversion of the Boston 3's from Great Britain to the U. S. S. R., these planes required modification and were found to be operationally incomplete, owing to the shipment of much of their equipment to Britain. The critical inspection of planes by the Soviet officials to whom they were delivered and the need of supplying special training

to the Soviet pilots who ferried them to their home bases had caused additional delay. On 19 April, General Adler cabled that 23 Boston 3's had already been accepted, and that the remaining ones, along with the A-20C's, were either in the process of assembly or of test.[132] When on occasion the pressure of work became unusually heavy, it was found expedient to borrow, from Africa, Air Corps officers, PAA pilots, or Gura personnel, for short periods.[133]

In February arrangements for the delivery of B-25's to the Soviet Union had been completed, and within a month the first of these medium bombers had been flown to Iran.[134] Brought by the Ferrying Command from Miami to Africa, and then on to Basra, these planes were set down on the field of the RAF station at Shaibah, 16 miles away, because that of the airport at Basra was not considered suitable for their use. Here the aircraft were carefully inspected, put to test flights, and prepared for transfer to Soviet representatives.[135] Since for reasons of security, the crowded condition of airdromes at Abadan, Basra, and Shaibah caused the RAF a good deal of concern, it had been suggested that the B-25C's be routed from Cairo to Teheran, via Habbaniyeh.[136]

Success in the delivery of B-25C's by air led, in June, to the proposal that ways be sought for flying the A-20C's to the Soviet Union by the trans-African ferry route. If the range of these planes could be increased sufficiently to make such a plan feasible, only a small crew would then be left in the Basra area for the final checking of planes. In all probability, the remainder of the group would then

be moved to Gura, or to other depots in India or the Middle East.[137]

On the basis of experience, General Adler was inclined to believe that the delivery of planes to the Soviet Government had become a depot rather than an assembly task. Although the Air Section of the North African Mission had furnished from its limited corps the maximum aid possible, delay in the arrival of personnel had proved a handicap. As a partial solution to the problem, he therefore recommended that the commanding officer for the Abadan depot, along with his staff, should be dispatched to Iran at once, so that Air Corps personnel might assume complete charge of the undertaking.[138]

If the United States were to engage in other enterprises in the Middle East theater at this time, it was agreed that the best contribution which American effort could make to aircraft maintenance and overhaul problems would be the establishment of a mobile depot in the Delta district--a recommendation which General Brett had made in the fall. In view of the concern of the RAF over the fact that senior Air Corps officers sent to inspect RAF installations had been unable to return to the United States to give firsthand reports of the difficulties involved in maintaining aircraft operations in the desert, it was suggested that an officer be detailed to Egypt for this purpose.[139]

One other significant proposal affecting the theater was made late in the spring. A survey of the ferry lanes across Africa and the Middle East had brought into prominence problems regarding the maintenance of these routes and provisions for their security.[140] There were, however, other matters in need of clarification--a situation

by no means surprising, in view of the rapid developments of the last few months.[141] Soon after the entry of the United States into the war, the Air Corps Ferrying Command had assumed responsibility for the ferrying of aircraft across Africa. This change of circumstance, dictated by military necessity, had relieved General Adler of previously assigned duties in connection with ACFC and PAA activities in that region.[142] In February 1942, a revision of contracts with Pan American Airways and its subsidiaries gave assurance of the ultimate militarization of the ferry route under ACFC control--a step not fully accomplished until December of that year.[143] The sweeping scope of the operations of the Ferrying Command had made necessary the administration of its affairs through a central office, where policies could be formulated and movements in both hemispheres regulated. Any other arrangement obviously would have proved an uneconomical use of personnel and equipment.

In order that the situation might be clearly understood in the field, General Maxwell was notified in April that his cooperation in furthering the efficient functioning of the Ferrying Command in North Africa was expected, but that he had no responsibility or authority regarding its operations. As administrator of the Air Service Command in the Middle East, he would be kept informed of the requirements of the Ferrying Command through its regional officer, who, in turn, would coordinate his activities with General Maxwell.[144] By definition of duties, the relationship between the Ferrying Command and the senior officer in the theater was therefore settled well in advance of the establishment of an American air force in the Middle East.

In the course of the winter, the number of combat planes and the amount of cargo delivered over the trans-African route had risen rapidly. By May the volume of this air traffic assumed such large proportions that the placing of an air officer in charge of all activities connected with the route was recommended.[145] Within a short time, this proposal resulted in the establishment of the Africa-Middle East Wing of the Ferrying Command (soon the Air Transport Command), with Brig. Gen. Shepler W. FitzGerald in command.[146] By 20 June he had reached Accra. He then proceeded to Cairo, where he entered upon his duties about a week later. From headquarters there he would direct the affairs of an organization extending from the west coast of Africa to Karachi in India.[147]

Before these arrangements could be effected, however, the military situation in North Africa was altered by the campaign which Marshal Rommel opened at the end of May.[148] As the British fell back under the force of attacks which carried the Axis line to El Alamein, it became obvious that their position might be rendered hopeless by lack of strong air cooperation.[149] Despite an accepted strategy which precluded the diversion of personnel, materiel, and shipping,[150] the United States sought means of reinforcing the Middle East at once, for there was reason to fear that loss of this region would result in the closing of the southern supply route to the U. S. S. R. and in the isolation of the India-Burma-China theater.

After a number of conferences with the British in June,[151] two forms of help were devised. The first of these grew out of the

Arnold-Portal-Towers conversations, in which it was agreed that nine American combat groups should be allotted to the Middle East.[152] With the understanding that the RAF would furnish maintenance and allied services until the arrival of American ground crews, it was decided that three of these units--one group each of heavy and medium bombers and pursuit planes--should leave the United States in July, and that the remainder should be moved to North Africa within the next 6 or 7 months, as ships became available.[153]

The second plan promised more immediate assistance. Because of the interdependence of the Middle East and Far East theaters, the Combined Chiefs of Staff had endeavored to maintain sufficient flexibility of plan to make possible the diversion of forces to whichever area had the greater need.[154] This policy was now acted upon. On 23 June 1942, Lewis H. Brereton, Commanding General of the Tenth Air Force at New Delhi, received orders to take all available heavy bombers and proceed to the Middle East,[155] to render assistance to Gen. Claude Auchinleck, who was then faced with a German army already well within Egypt. Because of the critical character of the situation, General Brereton was authorized to transfer such personnel and transports as were required for the proper functioning of the heavy bombers,[156] and to divert, from shipments bound for India and China via the Middle East, whatever supplies and equipment were essential.[157] On 25 June he left Karachi, with a detachment of Flying Fortresses and a small group of staff officers, among whom were General Adler, Col. Victor H. Strahm, Lt. Col. Cornelius V. Whitney, and Maj. Richard K. Pierce.[158]

Meanwhile General Maxwell had been relieved from duty as head of the U. S. Military North African Mission and assigned as Commanding General of the U. S. Army Forces in the Middle East (USAFIME).[159] On 19 June he formally assumed office.[160] Upon the arrival of General Brereton in Cairo on the 28th of the month,[161] it was therefore by general orders issued from General Maxwell's headquarters that he was placed in command of the U. S. Army Middle East Air Force, which comprised all air units then being collected as a striking arm for that area[162]--a position for which wide combat experience had admirably fitted him.[163] Although plans for a Ninth Air Force had been contemplated for some time, its establishment in the Middle East as a complete homogeneous unit now seemed contingent only upon the ability of the Allied Nations to hold the region.[164]

Chapter III

THE NINTH AIR FORCE TAKES SHAPE 28 JUNE TO 12 NOVEMBER 1942

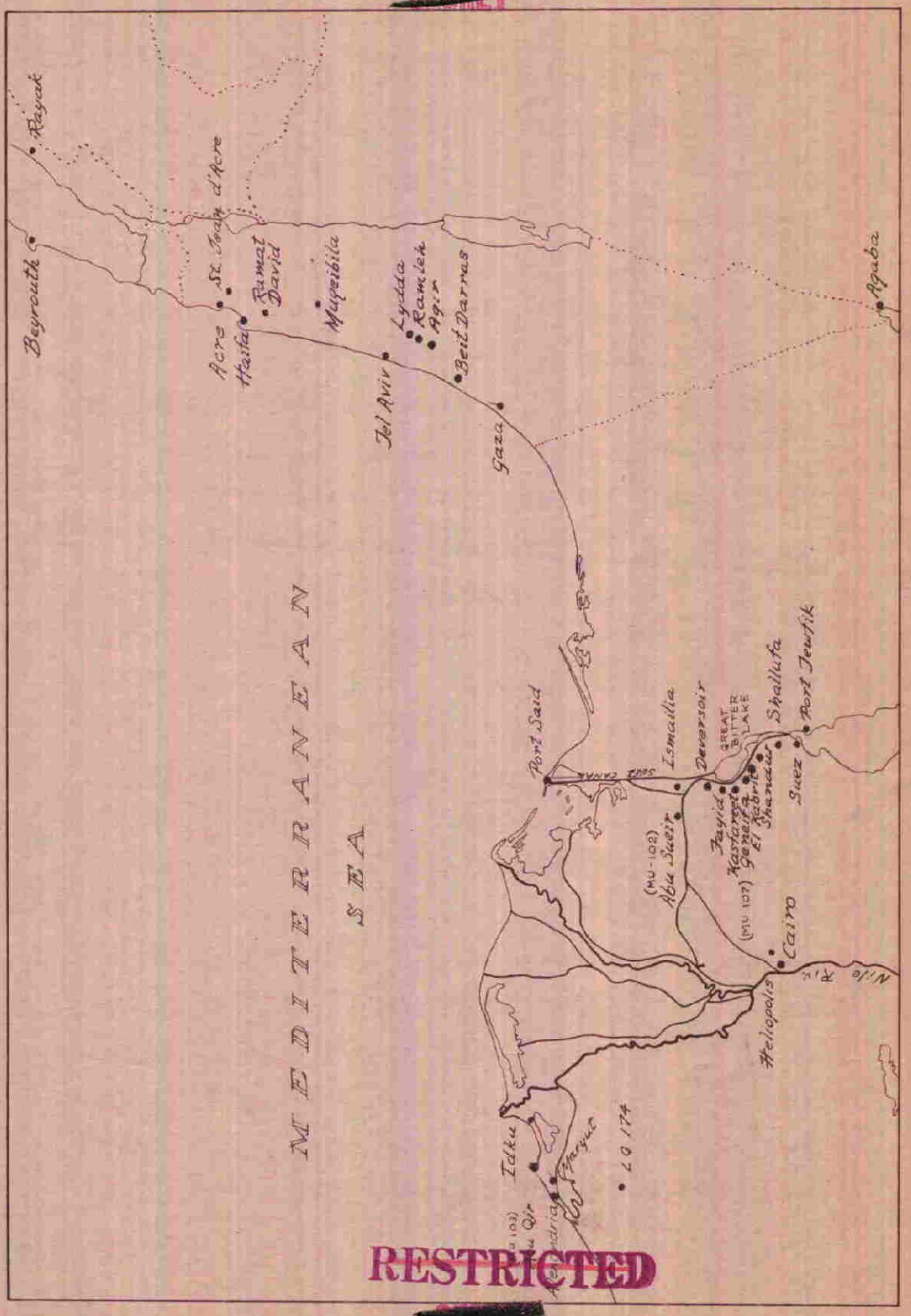
General Brereton's arrival in Egypt occurred at a time when the British were sorely in need of help. With the fall of Tobruk on 21 June, Marshal Rommel's army had swept forward and by 1 July had reached El Alamein, only some 70 miles from the great naval base at Alexandria. Whether the line could be held at that point was still a matter of conjecture. Under such circumstance, the sending of an American air force to the Middle East might well prove a decisive factor in the determination of that issue.

During the period in which the advance squadrons of this air force would operate in support of the British, it had been decided that they should be assigned to the United States Army Forces in the Middle East, under the command of General Maxwell.[1] This relationship was indicated in their designation as the United States Army Middle East Air Force (USAMEAF).[2] Inasmuch as the direction of air activities and coordination of effort with Generals Auchinleck and Tedder devolved upon him, General Brereton at first regarded this arrangement as most unsatisfactory. In an air theater of operations, he found himself in a post of great responsibility but without authority to deal directly with the RAF and British General Headquarters. Through faulty organization, he feared that the success of tactical operations might be jeopardized by a long chain of command.[3] In the best interests of the service, he therefore asked that this state of affairs be corrected. By way of remedy he

suggested the immediate activation of the Ninth Air Force and numerical designation for the air units already in the Middle East.[4]

Such action was out of question at the moment,[5] but within a few days an acceptable ~~modus operandi~~ was reached. By that time General Brereton had a thorough understanding of his mission and was receiving most generous support from General Maxwell.[6] He also could rely upon the full cooperation of General Adler, who was already busily engaged in developing the Air Service Command. Activated on the same day on which the Middle East Air Force itself came into being,[7] this command had been able to function almost at once, through material assistance furnished by the British[8] and the efficiency of a staff drawn largely from the Air Section of the former North African Mission.[9] With the help of personnel who had come with him from India and were now serving as a nuclear staff,[10] General Brereton then turned to the organization of his combat forces. These consisted of two units—the Brereton and Halverson Detachments. The Brereton Detachment, as its name suggests, was composed of members of the Tenth Air Force, drawn from two squadrons of the 7th Bombardment Group—the 9th and the 436th (formerly the 88th Reconnaissance Squadron). A number of these men had seen service in Java and the Philippines, and were looked upon as the most experienced heavy-bomber and ground crews in India.[11] The advance echelon had arrived at Fayid, Egypt, on 28 June 1942, but 2 days later was sent with its B-17's to the RAF station at Lydda, Palestine, where it was joined early in July by the rear echelon and command post.[12]

The Halverson Detachment (Halpro), on the other hand, was a



carefully chosen task force originally designated for duty in China. The special object for which it had been trained was the bombing of Tokyo,[13] an enterprise then cloaked in the greatest secrecy. Before departing for the Asiatic theater, however, Col. Harry A. Halverson, the commanding officer of the unit, had been notified that his group of B-24's might be deflected in Egypt for emergency operations.[14] According to instructions, he therefore proceeded to Khartoum, where he received orders to pause briefly in the Delta area for the performance of a single mission--a raid upon the Ploesti oil district of Roumania on 12 June.[15] After the completion of this assignment and participation in a damaging attack upon an Italian naval force off Taranto 3 days later (15 June),[16] the detachment had hoped to continue on its way. In fact, Colonel Halverson feared that one more cooperative mission in the Mediterranean area would deplete his unit to such an extent that its primary mission could not be accomplished. Moreover, lack of spare parts for B-24's in this theater would make operational maintenance a serious problem, for the Halpro supplies which had been shipped to Karachi were already deep within India, and resort to cannibalism would prove an expensive and disheartening process.[17]

Despite these objections, the critical character of the military situation led the British to press their case. Since Marshal Rommel's divisions had succeeded in breaking through their defenses in Cyrenaica, it was obvious that the main British forces would be obliged to withdraw to the Egyptian frontier in order to avoid encirclement. Heavy bombers were therefore badly needed to slow down the German pursuit and to stave

off the collapse of the Middle East. This circumstance, and the fact that the progress of the Japanese in the Burma-China sector made it extremely doubtful whether the detachment could reach its original destination, influenced the War Department to decide in mid-June that the Halpro task force should remain in the Middle East temporarily.[18] In accordance with this change of plan, Colonel Halverson was directed to assemble his command in the vicinity of Cairo and to report to General Maxwell.[19] The unit's connection with the North African Mission was limited to administrative matters only, however; for operational purposes it came under the direction of No. 205 Group of the RAF. Inasmuch as the headquarters of this group was at Ismailia and Halpro was stationed at Fayid, the proximity of their bases made such an arrangement relatively simple, for operations were merely a matter of daily conferences, with operational and intelligence material close at hand.[20]

Although the first two assignments of the Halverson Detachment marked the beginning of active American participation in the war in the Middle East, these missions had no immediate effect upon the Battle of Egypt. With the fall of Tobruk, and the change which this disaster made in the prospect of a successful stand on the Egyptian frontier, Halpro was brought directly into the conflict by the gravity of the British situation. Possession of the four-motor bomber, of which there were then very few in that theater, enabled this squadron to play a part out of proportion to the size of its force. The deterioration of

the defense during this period could be traced by the targets upon which Halpro's B-24's, flying with Wellingtons or British Liberators of No. 159 Squadron, concentrated night after night.[21] From 21 to 24 June, when the Axis advance was most rapid, they attacked the wharves and shipping at Benghazi in a series of raids intended to deprive Marshal Rommel of supplies that would not have reached him for at least a week, in any case.[22] The bombing of harbor installations at Tobruk promptly followed, for supplies landed there could be delivered to the front within a few days.[23] Finally, on the night of 28 June, the objective was tanks and motor transport on the road between Sollum and Matruh.[24] It was not the intention of the War Department that the planes of the Halverson Detachment should be employed in local tactical operations unsuited to the technical characteristics of heavy bombers.[25] Only the extreme need of weakening the enemy close to the front, so that the effects of the attack would be felt at once in the battle area, justified the use of these bombers for such a purpose. The delaying action of these and similar efforts, however, gained time for the British and made possible the regrouping and strengthening of their forces. By 30 June, General Auchinleck had gathered his available troops and equipment for a stand at El Alamein. Here the coastal corridor between the sea and the sands of the Qattara Depression, narrowing to a bottleneck of about 40 miles, constituted virtually the last point at which the British Eighth Army could hope to bar an Axis sweep into the Delta area. Since the Fayid

base on which the Halpro aircraft were stationed was now regarded dangerously near the range of German bombers, the B-24's were flown to Lydda, where the planes of the Brereton Detachment already were located.[26]

Within the next few days the British Mediterranean fleet retired to the upper reaches of the Red Sea, and plans for the evacuation of Egypt were completed. In an effort to conform to any movement of British General Headquarters in the Middle East, General Maxwell's headquarters were kept mobile in two echelons.[27] Pending the stabilization of the situation in Egypt, the headquarters of the North African Service Command and all activities not contributing directly to the support of current British and AAF operations were to be transferred to Eritrea by air and by sea. In the event that Cairo and the Delta area became untenable, General Brereton considered only one line of action open to him. If the British withdrew either to the east or to the south, he believed that the USAMEAF must remain with the Eighth Army in an attempt to fulfill its mission of rendering support to General Auchinleck. Should the British forces be destroyed in the Delta or in the Levant, he proposed the withdrawal of his air units to Khartoum for the maintenance of the trans-African ferry route, or to the east for the defense of the oil fields and refineries of Iraq and Iran.[28] Each alternative had much to recommend it, but in the face of existing conditions the second plan seemed to offer the greater advantage. If Cairo were evacuated, the air line to bases in Palestine would, of necessity, run from Khartoum to Basra, and then westward to

the Levant. Although, in such a case, immediate measures would be taken to reinforce the staging fields across the continent, it was obvious that future Axis successes might necessitate abandonment of the northern ferry route.[29] In the hope of insuring continued deliveries to the Far East, even under such circumstances, preparation of the southern ferry route across Africa had been hastened and rights to fly over central as well as southern Arabia had been procured.[30] If the northern Red Sea ports could not be held, personnel and supplies would be diverted to Basra. Because nearness to the coast and the lack of ground defenses, antiaircraft artillery, revetments, and westward air-raid warning facilities made aircraft and airdromes in Palestine extremely vulnerable to enemy air attack from Crete, there was grave concern over the security of these Levantine airdromes.[31] Lack of bases in depth and the necessity for conserving fuel had, however, required the use of these coastal facilities.[32] In an emergency, the heavy bombers could be transferred to the Persian Gulf district, and in a last extremity they could fall back upon India.[33]

Fortunately Marshal Rommel's army was halted at El Alamein, and the development of the USAMEAF progressed without interruption. On 17 July the Halverson Detachment was redesignated the Hal Bombardment Squadron.[34] About the same time the Brereton Detachment also took squadron status, and 3[illegible] days later (20 July) these two combat units, with a group headquarters, were welded into the First Provisional Group under the leadership of Colonel Halverson.[35] During the month of July, Tobruk and Benghazi were the principal targets against which operations

were directed. According to prearrangement, on all approved missions, the American heavy bombers were to be dispatched from Lydda to their former base at Fayid for briefing and final instructions issued by the RAF, under the general supervision of Air Commander Ritchie. To Colonel Halverson this system was not wholly satisfactory. Distance made communications and coordination difficult. As a consequence, he often received meager information regarding operations and sometimes felt that he was given insufficient warning concerning them. Under this method, he also lost control of his organization as soon as it departed from Lydda.[36] A solution to these problems was found in the assignment of Maj. Alfred F. Kalberer as liaison officer with No. 205 Group at Ismailia, and in the sending of several American airmen to Fayid to serve as a small advanced operational staff.[37]

For General Brereton's command, the next few months represented a period of rapid expansion. The 57th Fighter Group, led by Col. Frank Mears, began to arrive in the theater before the middle of July, and by early August the group had become an official part of the American air force in the Middle East. This unit, later known among newspaper correspondents as "The Flying Circus" because of its spectacular assaults, consisted of Group Headquarters and the 64th, 65th, and 66th Fighter Squadrons.[38] Owing to the various means of transport employed, these components reached the Middle East at different times. Since speed was a matter of prime importance, an experiment used successfully in April, when fighter planes were needed in India, was resorted to again. Pilots who had received previous instruction in the principles of carrier technique and 72 P-40 F's were taken aboard the U.S.S. Ranger.

which left Quonset, R.I., on 1 July. When the ship was within a hundred miles of West Africa, the aircraft were launched, in groups of 18, from a point off Accra.[39] After landing on the coast, the planes were then flown in a series of hops along the transcontinental ferry route to Egypt. For the skilful piloting of the P-40 F's across the jungles and desert wastes of Africa, the 57th Fighter Group received commendation from General Maxwell and General Brereton, both of whom commented on the negligible percentage of aircraft lost in the crossing.[40] This record was made possible by the efforts of ground crews, who followed by air transport. After landing on the same fields as the fighters, the men would spend the night putting the P-40 F's into condition for the next leg of the trip.[41] In this way all the planes of the 57th Group were transferred across the continent. From Cairo, they moved on to a temporary station at Muqeibila, Palestine, where they arrived at the end of the month (29-31 July).

The rest of the air echelon and a small number of essential personnel also had left the United States at the beginning of July; having traveled by air, they had reached Muqeibila more than 2 weeks earlier (12-13 July).[42] These first arrivals were given practice in formation flying, or were sent into the desert to gain combat experience by being infiltrated into seasoned British wings. The progress of the latter group, made up principally of squadron commanders and flight leaders, was evinced by the fact that as early as 12 August some of these pilots participated in a mission of No. 233 (afterwards No. 7 SAAF) Wing over enemy territory. In almost a month of flying with this wing, the Americans learned a

great deal about tactical missions and the characteristics of air warfare in the desert--the need for mobility of fighter units cooperating with ground forces, the reduction of squadrons to a minimum, and their organization into ground and air echelons, so that they could leapfrog ahead, or withdraw, if there were occasion to do so.[43]

Meanwhile the ground echelon embarked on H. M. T. Louis Pasteur, which sailed from New York on 16 July 1942. After a long voyage across the submarine-infested Atlantic and around the Cape of Good Hope, these men reached Port Tewfik a month later and, from the reception center at El Kabrit, were sent promptly to Palestine to rejoin their respective units. About the time of the arrival of the ground echelon, the three squadrons were dispersed for a period of training--the 65th was transferred to Cyprus; the 66th moved to Beit Darras, near Lydda; and the 64th, together with Group Headquarters, remained at Muqeibila for the time being.[44]

Although the instability of the African and Russian fronts made it questionable whether sufficient security could be provided for the Middle East bases available to bombers, the shipment of the 98th Bombardment Group (H) overseas in July had nevertheless been decided upon.[45] The announcement of its coming was most welcome to General Brereton, for the number of operationally fit planes at his disposal was becoming so reduced that he feared the bombardment efforts of the USAMEAF would soon prove ineffectual. Needless to say, such a circumstance would have been disastrous, for the American heavy bombers had already played a part in interrupting Axis shipping to North Africa and in safeguarding

the Eastern Mediterranean.[46]

Since the supply and maintenance of bombers in the Middle East presented something of a problem, it was considered essential that they leave the United States with enough small spare parts for a 60-day period.[47] The 98th Bombardment Group was therefore well equipped before its departure. The limited facilities of the Air Service Command of the USAMEAF, however, had led to the suggestion that this group be stationed temporarily at Gura where the Douglas Aircraft Company had a force of approximately 600 men with twice that number en route, or in the vicinity of Pointe Noire, French Equatorial Africa, where it was then thought that the 8th Air Depot Group would be located upon its arrival in Africa early in August.[48] Although it was tactical considerations that determined the choice of an operational base for the group, its maintenance needs were given a good deal of thought.[49] Fortunately the ground echelon of the unit was able to sail on the Pasteur with the ground echelon of the 57th Fighter Group. Having reached Egypt by the middle of August, it soon proceeded to bases in Palestine.[50] Meanwhile, with instructions to carry as many maintenance men for combat planes as possible,[51] the air echelon had left Lakeland, Fla., by squadrons, between 17 and 30 July. By 7 August it was reassembled in Palestine, under the command of Col. Hugo P. Rush. Here the group was established on two fields: Group Headquarters and the 345th and 415th Squadrons were located at St. Jean d' Acre, while the 343d and 344th Squadrons were camped at Ramat David, near the Syrian border.[52]

With the arrival of the 98th Bombardment Group, the work of the

small advanced operational staff at Fayid was increased, since it was found expedient for this group also to make use of the Fayid base as a landing ground for refueling before continuing on missions to the west. The operational staff at Fayid was therefore assigned to Major Kalberer, and the liaison duties with No. 205 Group became an operational staff task for the two units, supplying them with all their operational and intelligence material and also briefing their crews, either at their own base or at the one at Fayid. When crews of both groups were on the Fayid field, transmission of information and the details of briefing could be carried on without any difficulty. Communications between Palestine and the Suez area, however, were none too good, and distances were considerable. When the two groups took off directly from their home fields, Major Kalberer was hard-pressed to get his Lockheed Hudson, obtained from the RAF, to all the bases in time to do a thorough job.[53]

The 12th Bombardment Group, Medium, commanded by Col. Charles Goodrich, also was added to the USAMEAF about the same time. Designated originally for a North Ireland project, the unit had been diverted when plans for a Middle East air force were undertaken.[54] By way of preparation for foreign service, the organization had been given a period of intensive training and, as a result, was well qualified and well equipped when ready for movement overseas. The ground echelon embarked on the Pasteur and arrived in Egypt in the middle of August. The air echelon, however, departed from Morrison Field, Fla., between 14 July and 2 August following a course which ran through Puerto Rico

and Trinidad to Brazil, then across the South Atlantic by way of Ascension Island, and thence along the trans-African ferry route to Egypt. In actual flying time, these thousands of miles were covered in an average of 72 hours. Despite the difficulties of the route, the group lost none of the 57 Mitchell planes (B-25's) and crews with which it set out. Upon reaching the Delta area, the squadrons were separated: the Group Headquarters with the 81st and 82d Squadrons were assigned to Deversoir airdrome, while the 83d and 434th Squadrons were located at Ismailia, about 20 miles away.[55] Since both of these units were to furnish support to the British Eighth Army, they were placed under the tactical control of the RAF.

For an introduction into desert warfare, mid-August proved to be a most opportune time. Owing to the need for building up serviceability in preparation for a fall offensive, neither side was engaged in intensive activity at the moment. Under the tutelage of RAF and SAAF wings, the group was given a month of intensive training. This proved an experience of great value, for location of the target in the desert was a most difficult task, and one which often could not be mastered until the battle area had become fairly well known. (In fact, it is said that this knowledge sometimes was not acquired in fewer than 20 or 25 missions.) During this period, five missions were flown to acquaint the crews with the various aids to navigation available in the Middle East. The first raids were night attacks upon harbor installations at Mersa Matruh and enemy airdromes at El Daba and Fuka--a type of mission for which they were ill-suited until equipped with

flame dampeners.[56]

On the Pasteur also came the 323d Air Service Group, consisting of Headquarters and Headquarters Squadron, two service squadrons, a signal company service group, and various ordnance and quartermaster companies. After making several intermediate stops, the unit arrived, on 24 August, at its base at Rayak, Syria, where it took up its duties of servicing and supplying the American air force in that area.[57] Until assistance could be sent, its responsibilities were unavoidably heavy, but in an emergency manufacturers' representatives and the Douglas personnel from Gura and the Persian Gulf district, who were manning the advanced depot in the direction of Basra, could be called upon for help.[58] Inasmuch as all combat units of the USAFIME, except the 12th Bombardment Group, were stationed in Palestine, the depot was reasonably well located with reference to the squadrons which it served.[59] Its location at Rayak had been largely a matter of circumstance, however. At the time of the arrival of the 323d Group, the military situation was such that only a small number of suitable airdromes was available. The Air Service Command was therefore faced with the problem either of turning over all its supplies to the RAF for storage, or of finding a site for an air depot. As one of the few possibilities, Rayak offered desirable facilities in the way of hangars, warehouses, and living quarters--considerations which seemed to outweigh whatever disadvantages existed. The improvisation of a depot here made it possible for the Air Service Command to use its own methods of supply and so proved a major factor in the maintenance of a high percentage of aircraft in operation.

Whenever the campaign in Egypt permitted movement to the west, the establishment of air depots in support of these units would, of course, be necessary.[60]

Throughout the summer expansion of the Air Service Command had been furthered by every means. Although the RAF was furnishing housekeeping, supply, and maintenance for all American bases in the combat zone, obviously the resumption of hostilities in the fall would make it more difficult for the British to continue this service. The recent arrival of ground echelons, and the development of essential facilities, would doubtless do much toward helping the American units to attain a fair degree of self-sufficiency.[61] In the meantime, it was agreed that there should be no interference with the quantity or present system of supplies to the British, for the repair and maintenance both of RAF and AAF aircraft was of the greatest importance.[62]

Since Palestine was an area from which heavy bombers could operate satisfactorily both to the north and the west, there was reason to suppose that they would be stationed there for some time. As a consequence, this region became the center of gravity for American installations, and a new supply line based on the railhead and port of Aqaba was opened. These developments had more than local importance, for, in relation to the theater as a whole, Palestine was looked upon as a potential zone of communications from which axes would extend east to the Persian Gulf and south to Gura. Such a scheme not only would lend flexibility to the logistical plan, but also would provide means for maintaining a greatly enlarged air force.[63]

Although Gura, like Abadan, was excluded from the USAMEAF and retained under theater control, the Air Service Command acted as the controlling agent for General Maxwell and, at his request, had assumed direction of the technical staff at both places--an arrangement which insured the maintenance of close contacts with these depots.[64] At Gura, the overhaul of aircraft and engines had already been begun,[65] but, owing to the loss of machine tools, spares, and other equipment through the sinking of the Oklahoman off the east coast of Africa early in July,[66] only limited operations were possible during the summer. Until this materiel could be replaced by shipments from the United States, the RAF had agreed to furnish from its stocks such supplies as it could, and every effort was made to utilize the existing facilities and manpower for the district.[67] Both to installations and personnel at Gura, the presence of the enemy in Egypt was thought to constitute a grave hazard. Sabotage always loomed as a menace, but now there was reason to believe that even the danger of capture could not be disregarded. Defense of the Eritrean area as a whole was a duty devolving upon the British, who would endeavor to carry out the obligation as long as the Eighth Army remained intact. The internal security of the depot itself was an American responsibility. In the absence of an adequate number of military police, authorities were therefore urged to take all possible precautionary measures for its protection.[68]

Upon completion, Gura was envisaged as a central control depot for aeronautical supplies furnished by the United States. Although all materiel would not actually be stored in warehouses there, the keeping

of a complete set of record-files at the depot would do much to eliminate duplication both of procurement and equipment--a matter especially serious in the Middle East because of the extreme shortage of transportation facilities. Moreover, such an arrangement would have the additional advantage of making possible the linking of theater requirements for the RAF, American combat units, and Air Transport Command. In order to determine the operational details of a system of this sort, discussions with the Royal Air Force Delegation in Washington were to be held in the fall.[69] To proposals for the formation of a single supply and maintenance organization with British and American sections, there was objection on the ground that such a plan was not consistent with American military policy. Although interest in keeping a maximum number of planes in the air made a common aim essential, it was the American opinion that the same ends could be achieved through close cooperation of the two independent service commands.[70]

Meanwhile a careful study of present and projected operations had indicated that a Services of Supply organization was badly needed for the United States Army Forces in the Middle East. By utilizing all available installations, it was decided that an organization of this kind could be established effectively in subordinate service commands located in Eritrea, the Delta, the Levant, and the Persian Gulf district. In these four commands would lie the technical and administrative strength of the organization, while the Services of Supply headquarters--purposely kept small--would confine its duties to planning and inspection.[71]

As the summer wore on General Brereton strongly opposed the return of the combat crews and planes of the 9th Bombardment Squadron to the Tenth Air Force and the dispatch of the Halverson Detachment to the India-Burma-China theater. His objection was based on the argument that withdrawal would reduce the heavy-bomber effort of the Middle East by as much as 50 per cent. Since the RAF in the Middle East had not been equipped with this weapon originally, he felt that, in his theater, this type of plane should be increased rather than diminished in number. The effectiveness of his plea was reflected in the decision that both units should remain in the Middle East for the time being.[72]

Reassured on this point, General Brereton then turned his attention to administrative affairs. In order to avoid duplication of personnel, he organized his headquarters in Cairo with a small tactical and strategical planning staff, and a supporting air service command. This pattern, similar to that which was used by the Tenth Air Force in India, appeared to be well suited to this theater, because the headquarters of the air force and the air service command were in close proximity.[73] Both headquarters consisted largely of personnel on temporary duty from the Tenth Air Force and the Air Section of the North African Mission.[74] Under the direction of General Adler as air service commander, and Colonel Strahm as chief of staff, these groups now worked in full accord with the British. Inasmuch as close cooperation of this sort was essential to the efficient functioning of the USAMEAF, General Brereton was unable to say when they could be returned to India. The transfer of officers and enlisted men to the Middle East had greatly

handicapped the Tenth Air Force, which was suffering from lack of personnel at the time of their departure.[75] Since Brig. Gen. Clayton L. Bissell, then commanding that air force, wished to bring it up to the strength prescribed by the table of organization as soon as possible, a clarification of the situation was requested.[76] After some deliberation, it was finally agreed that the staff officers who had accompanied General Brereton to the Middle East should be relieved from duty with the Tenth Air Force and assigned to the Ninth, and that General Brereton should remain to command this air force, which soon was to be established in the theater.[77] On temporary status, the air echelon of the 9th Bombardment Squadron, along with certain transport and replacement crews on detached service, might also be retained in the theater,[78] but the ground echelon of the heavy bomber detachment was to be dispatched to India by the middle of October.[79] Owing to difficulty in arranging for transportation, it was, however, November before the last of these personnel left the theater.[80]

With the approach of autumn, the British began to complete their preparations for the coming campaign. The preliminary thrusts which Marshal Rommel had attempted during the summer had shown that the two armies were fairly evenly matched in strength. Additional equipment or large consignments of supplies might easily swing the balance in favor of one or the other. Fully aware of the gravity of the situation, Colonel Fellers, as American Military Attaché in Cairo for the past 15 months, had strongly urged immediate reinforcement of the Middle East. Although a pronounced shortage of ships seemed to prevent such a step,

nevertheless a study on the feasibility of augmenting AAF participation in operations in that area was initiated. If a revision of schedule were possible, it was hoped that additional groups allocated to the theater could be placed there at an earlier date.[81]

For the reinforcement of the USAMEAF, plans had been made for the sending of the 33d Fighter Group to the Middle East in September.[82] Not long before its departure, however, General Doolittle had requested the assignment of this group to the Northwest African project. Since the group was ready to leave, and the ship available for its transportation could carry P-40's only, General Arnold was not in favor of the diversion. Nevertheless, he was willing to withdraw his objections, if the British Chiefs of Staff concurred in the change.[83] The reassignment of this group would delay the arrival of the second fighter group in the Middle East until November--a fact which troubled General Arnold greatly, because he fully appreciated the importance of building up the American air force there in support of British operations in the theater.[84]

When the proposal was submitted to Sir Charles Portal, his reaction to the matter was negative. Inasmuch as only a limited number of air units could be supported in the area in which the Northwest African force would operate, he thought it wiser to employ fewer of them, and to rely on replacements. In view of the recent concern of Air Marshal Tedder over the fighter position in the Middle East, other British officials agreed with Sir Charles in maintaining that a reduction in that force could not be approved.[85] The question was then referred to General Eisenhower. After conferring with General Doolittle, he was

inclined to think that the strategical importance of the Northwest African project justified the diversion of the 33d Group. However, in giving his decision, he emphasized the fact that air superiority in Egypt would contribute greatly to the success of the Northwest African undertaking, and therefore expressed the hope that other P-40's could be dispatched to the Middle East quickly, and in numbers sufficient to increase the strength of the British forces.[86]

By 22 September, General Marshall was able to give the British reassurance that, as partial compensation for the temporary loss of this second fighter group, arrangements had been made to ship 100 pursuit planes to the Middle East. Forty-eight of these, originally intended for the 33d Fighter Group if it had gone to that area, were already en route to the Gold Coast.[87] To fly them to Egypt, pilots of the 79th Fighter Group, which was to serve as a replacement unit for the 33d Fighter Group, would soon be sent by air to Accra, and the remainder of the air echelon would follow within a short time. Since the ground echelon was scheduled to sail in October on the ~~Mauretania~~, which was bound for the Middle East by way of Rio de Janeiro and the Cape of Good Hope, it would be almost the middle of November before they could reach Egypt.[88] In order to provide a maximum amount of training for the combat crews of the 79th Group, who had had less experience with the P-40's than had the pilots of the 57th Group, General Brereton requested that an advance echelon of 150 enlisted men for maintenance work, and 10 ground officers, be flown to Cairo. He felt that their arrival, concurrent with the dispatch of planes from the

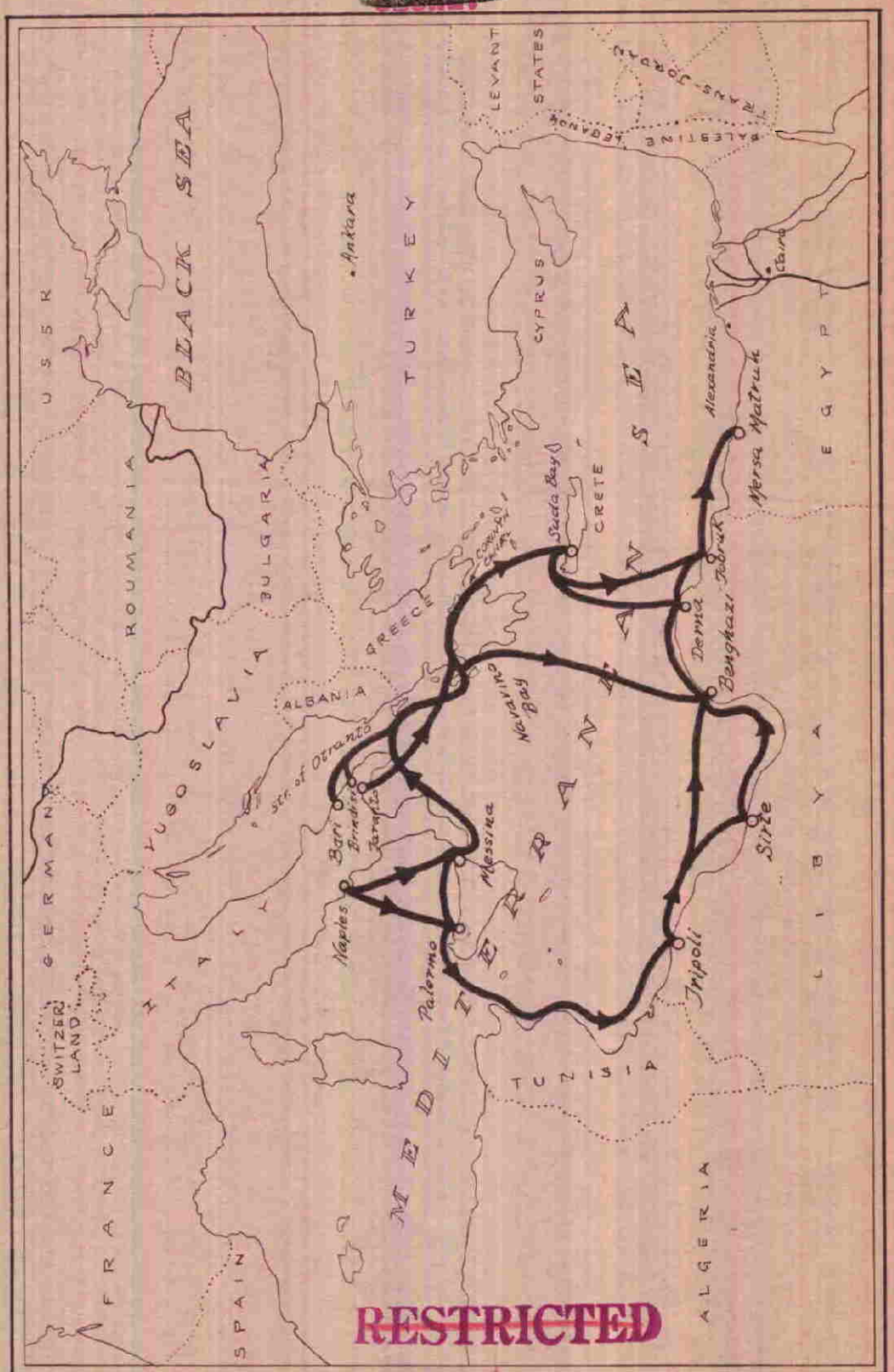
erection depot in West Africa, would not only further the operational training of the group but would advance their entry into combat by 6 to 8 weeks.[89]

These plans for reinforcing the fighter position in the Middle East greatly relieved Sir John Dill and Sir Charles Portal, who were forced by the length of the supply line to Egypt to think always in terms of probable future needs. They were, moreover, keenly aware of the importance of maintaining a steady flow of planes to this theater, for the RAF was already feeling the effects of a serious gap in the June shipments of the P-40's. To be sure, compensation had been made during the next 2 months, but a fresh lag was bound to result from the diversion of the 33d Fighter Group and from the inevitable delay which would arise before the 79th and subsequent fighter groups were fit for service. Unfortunately this shortage would manifest itself at a time when the opening of the fall campaign would have occasioned hard fighting in Libya.[90]

Under the circumstances, Sir Charles Portal believed that it would be of considerable value if General Brereton and Air Marshal Tedder could be instructed that all P-40's in the Middle East should be treated as a common pool for the maintenance of American and British units, at the strength prescribed by previous agreement. According to Sir John Dill, this principle had been adopted in the ABDA area in the early part of the year. In such conditions as prevailed in the Western Desert, he foresaw that, of necessity, the P-40's of both the AAF and the RAF would pass through the same repair shops and would be

maintained from the same stock of spare parts. Therefore it did not seem to him feasible that individual planes should be earmarked for the sole use of one or another of the air forces in the theater. In his opinion, matters would be simplified for commanders in the field, if they were empowered to use available resources in whatever way seemed to them, by mutual agreement, best calculated to insure the heaviest impact on the common enemy.[91]

This suggestion, included in a letter to General Marshall, was given careful consideration. The idea was not a novel one, for a cable dispatched to General Brereton in July had stated that provision for a pool of P-40's had been made through a recent agreement with the British.[92] Upon investigation, it was learned that the arrangement was based on verbal agreements with the RAF Delegation in Washington, and apparently had never been communicated to authoritative British representatives, a conclusion borne out by the tenor of Sir John Dill's letter.[93] The agreement itself seems to have been more limited in scope than the cabled message implied, and may well have been intended merely to provide compensation for temporary shortages arising from irregularities in the shipment of planes, or in production of models.[94] As a matter of fact, the fixed monthly allotment of American-manufactured aircraft to the British did not take account of the number of British squadrons equipped with the P-40, and as a result the pooling of this sort of plane was, at the time, virtually out of the question.[95] General Brereton was therefore informed that a plan for the control of all spare parts through a United States central



ENEMY SHIPPING ROUTES

depot in each theater was then under discussion, but that aircraft would be assigned to the various theaters in accordance with previous commitments. Under conditions mutually acceptable to him and Air Marshal Tedder, however, exchanges or temporary loans of aircraft common to the AAF and RAF might be made, provided the normal operational equipment of both forces was maintained at the strength prescribed by existing commitments.[96] Along with the assurance that the United States would send fighter planes to the Middle East at the maximum rate consistent with the fulfillment of its obligations to other theaters, these views were conveyed to Sir John Dill, in the hope that they would be found substantially in accord with the suggestion contained in his letter.[97]

In the course of the summer an RAF squadron of B-24C's had been sent to the Middle East, and a part of it had remained under the designation of No. 160 Squadron. The heavy bomber force had been further augmented by a squadron of Halifaxes too.[98] Despite these efforts to send to the Middle East the only reinforcements that could arrive in time to be of service, many observers feared that the Allies were faced with too great odds. Cut off from the western Mediterranean but nevertheless determined to save the Middle East, they were forced to bring the bulk of their supplies from Great Britain or the United States, through sea lanes infested with submarines and lurking surface raiders. Their one advantage lay in the relatively short haul by which fuel oil, in its various forms, could be obtained from the refineries of the Persian Gulf district.

By contrast, the Axis needed to run only the width of the Mediterranean to transport oil and other supplies to North Africa. After the occupation of the Balkan Peninsula by the Germans, Greece had become the rendezvous for large numbers of vessels laden with war supplies for Marshal Rommel's forces. Navarino Bay, situated near the southern tip of the Peloponnesus, was one of the most frequented resorts of this kind. Its excellent natural harbor was used by the Axis as a refueling base and transit point for the ships of the Mediterranean convoys, which would creep down the Greek coast, after crossing the Strait of Otranto from Brindisi or Bari, on the heel of Italy. At Navarino Bay they could await a propitious moment to dash across the Mediterranean to Benghazi, or pick up an escort off Crete, before setting out for Tobruk. Since the closing of this sea lane was essential to the Allied effort, it was against this supply line in general and its tanker components in particular that the growing strength of American heavy bombardment was directed through the summer months preceding the Libyan Campaign.[99]

From their Levantine bases, the American bombers also struck at port installations, warehouses, and shipping in harbors. In addition to Navarino Bay, these far-flung targets included the Corinth Canal and other places in Greece, Candia and Suda Bay in Crete, and Benghazi and Tobruk in Libya, with special trips to Mersa Matruh, Sidi Barrani, and the Bardia Road. Toward the end of the summer the bombardment to which both Tobruk and Benghazi were subjected, finally became so heavy that convoys which succeeded in running the blockade stood little chance

of unloading their cargoes. This state of affairs eventually forced the Germans to resort to the use of air transport from Crete for supplying their armies in Egypt--a step which was reflected in the adding of Maleme Airdrome to the heavy bombers' list of targets.[100]

When the heavy bombers of the USAMEAF first began combat operations in the Middle East, the weather had presented no problem, for during the summer clear skies, excellent visibility, and light winds had prevailed throughout the area of operations. With the approach of autumn, however, there was need for a forecasting service which would furnish weather information to the two heavy bomber groups stationed in Palestine. The weather officers of both units planned for its establishment at the earliest practicable date. Meanwhile, the Palestine Meteorological Service and the Senior Meteorological Officer of the RAF in the Middle East gave valuable assistance by supplying climatological data. In September, when, through lack of personnel and equipment, it still seemed impossible to organize a United States weather service, the RAF moved one of its forecasting stations to Ramleh, in Palestine. As a result of repeated requests for men and material, there began to trickle in enough weather personnel and equipment for the opening of a forecast station and two observer stations in Palestine, in October. The former was attached to the 98th Bombardment Group, and the latter were placed at emergency landing fields, while the RAF station at Ramleh continued to supply weather reports to the First Provisional Group (soon the 376th Bombardment Group).[101]

In early September a discussion regarding the rate of employment of American heavy bombers and the kinds of target against which they should operate had shown the need for an organization that would supervise the activity of the two heavy bomber units. If these were to be used to greatest advantage, it was obvious that they should operate under mission-type orders. Inasmuch as the 98th and the First Provisional Groups made up four-fifths of the heavy bomber force in the Middle East, and American combat commanders were more experienced in the handling of these heavy bombers than were the British, it seemed fitting that the operational control of all heavy-bombardment aircraft in the theater 102 should be placed under the commanding general of the American air force. A suggestion to this effect, and subsequent negotiations with the RAF, resulted in the activation of the Bomber Command, USAMEAF, in Cairo, on 103 12 October. While the command was still taking shape, its striking force was augmented by the addition of No. 160 Squadron (RAF), which also was to be stationed in the Canal area. The allocation of this British unit to the Bomber Command for operational purposes was a logical step, for the squadron was equipped with Liberators, and originally had been part of No. 159 Squadron (RAF), which had operated in the theater during the summer. The confidence shown by the commanding officer of the RAF in placing this squadron with an outstanding war record under American control was much appreciated by General Brereton, who gave assurance that all organizations of his air force would cooperate 104 in the furtherance of their common endeavor.

The personnel for the nuclear staff of the Bomber Command were derived from various organizations in the Middle East. Col. (soon Brig. Gen.) Patrick W. Timberlake,[105] senior operational officer at General Brereton's headquarters, became commanding officer of the unit, and the small operational staff that had been working with No. 205 Group (RAF) was transferred into the Bomber Command as the A-3 Section, with Maj. Albert F. Kalberer still in charge.[106] Lt. Col. Donald Keiser, who had come to the Middle East by way of the Philippines, Java, and India, assumed the duties of the chief of staff,[107] while Maj. Horace M. Wade, a member of the First Provisional Group and of the former Brereton Detachment, directed the A-2 Section, and Lt. Carter Glass III, of the 98th Group, represented the Signal Corps.[108] Although small, the organization had a compactness which facilitated mobility of action, and it benefited greatly from the fact that its sectional heads were drawn from operational groups and had had previous experience in working together.

Because of the nature of operations in the Middle East, it was impossible for the entire Bomber Command to operate under one roof, and consequently part of it (the commanding officer, the chief of staff, the general staff, and a few special staff officers) was stationed in Cairo, while the remainder of the staff and most of the enlisted personnel were located at Ismailia. In Cairo, the Bomber Command had offices in the same building that housed the RAF Middle East Headquarters--an arrangement which furthered the close cooperation between the two organizations. All information which pertained to the selection of targets and the planning of raids was furnished by the

British. Every day General Timberlake consulted the Senior Air Staff Officer (RAF) regarding the objective of the next mission. Data on the target itself and its air and ground defenses were supplied by the A-2 Section. With this material in hand, A-3 prepared the details of the operation, and Signals coded and dispatched the order to the groups in Palestine. Upon completion of the mission, the Group Intelligence officers telegraphed the results to the Bomber Command, where a 24-hour watch was maintained. This report was then condensed into an operational summary, which was mimeographed and made ready for distribution early the next morning. 109 Arrangements such as these enabled the two bomber groups to operate under their own control, with only strategic direction from the British. Their position was therefore somewhat different from that of the 57th Fighter and 12th Bombardment Groups which had been placed under the tactical control of the RAF.

From the time of the arrival of the Halverson Detachment in Egypt in June, the exploits of the heavy-bomber crews had attracted so much attention that there was a natural tendency to consider the part of the United States in the North African campaign as purely a heavy-bomber role. In a sense, that point of view was correct, for the Middle East had proved an excellent field for testing the effectiveness of long-range bombardment. The activities of the Flying Fortresses and Liberators represented only one aspect of the American contribution to Middle Eastern combat operations, however. While the 98th Bombardment and First Provisional Groups were carrying out missions which captured the popular imagination, the 57th Fighter Group and the 12th Bombardment

Group, Medium, were engaged in the performance of extremely useful, but less spectacular, tasks.

The necessity for fighter pilots to acquire operational experience prior to their entrance into combat had sent the three squadrons of the 57th Fighter Group into the desert for a period of training upon their arrival in Palestine. Owing, however, to the limited time available for orientation in the theater, it had been decided, after consultation with RAF officers, that this process could be accomplished most expeditiously by having all pilots of the 57th Group fly combat missions with British and South African squadrons.[110] This policy for orientation was soon put into effect, for at the very end of August Marshal Rommel launched an offensive against the El Alamein line, which had been more or less stable since July.[111] This attempt, which was to prove the last serious threat to Egypt, resulted in 5 days of hard fighting. During this engagement, P-40's of the 57th Group flew with RAF Kittyhawks furnishing fighter protection for the bomber shuttle service. The systematic escorting of one mission after another was a good introduction to combat operations, for great efficiency was achieved as the fighters joined the light bombers in a rendezvous over the field, and then accompanied them into the desert, where their attacks were directed mainly against columns of trucks bringing up gasoline and reinforcements for the striking force of enemy tanks and infantry.[112]

When Allied plans for the fall offensive were being made, it was decided that the entire 57th Group should be assembled at Landing Ground 174, about 35 miles southwest of Alexandria. Here the group

would serve as an air force reserve during the weeks of preparation, and in accordance with this plan, all units of the group were consolidated at this first American airdrome in the Western Desert on 16 September.[113] Since the 57th Group took part in only an occasional mission during the lull which followed Marshal Rommel's abortive attack on the El Alamein line, late September and early October were spent largely in training flights. Some of these were conducted by No. 239 Wing, an RAF Kittyhawk unit stationed in the neighborhood. In fact, it was from this organization that the 66th Squadron learned the value of flying in "sixes," a formation which permitted greater fluidity than the pattern of "fours" which they had flown with No. 233 Wing, and which was used by the other two squadrons of the group. Its adoption by the 66th Squadron occasioned a good deal of discussion among other members of the group, but before long this formation was generally accepted as satisfactory and proved to be one which the 66th Squadron retained throughout the ensuing campaign.[114]

Upon arriving in the desert, the 57th Fighter Group found that all RAF fighter units were completely mobile, and consequently every man had a place to ride. Owing to the loss of ships carrying trucks, it was only after some difficulty that the 57th Group was provided, in September, with transportation of this kind. All units of the group could then be transferred from one locality to another within 2 or 3 hours. In the absence of truck companies, a mechanic, a crew chief, even a cook, was sometimes used as a truck driver. In their spare time, after the move was completed and the airplanes were dispersed, these

men worked on their machines. Their efficiency was shown by the fact that up to the time Benghazi was reached, not a single truck had been towed.[115]

Since, for some time, the 57th Fighter Group--as well as the two heavy bombardment groups--had been operating from landing grounds in Egypt, and consequently at considerable distance from their main base in Palestine, it had been necessary for the RAF to perform much of the ground maintenance for these squadrons. The continuance of such an arrangement seemed advisable until such time as the American air force was capable of assuming this responsibility for itself. The availability of a large number of ground personnel in the combat units, however, now appeared to make possible the assumption of first-echelon maintenance. Such a step was highly desirable, in that relief from this sort of responsibility would free British personnel for the enlargement of base facilities and repair depots, for which they were especially well fitted. Meanwhile, strenuous effort was made to further the self-sufficiency of the American units and to provide personnel and materiel for RAF units giving technical assistance to the USAMEAF. Closest cooperation between the American Air Service Command and that of the RAF was maintained, especially in the forward areas, where it was sometimes difficult to separate one from the other.[116]

On 6 October the 66th Squadron was attached, for operational purposes, to No. 239 Wing,[117] which was prepared to go forward in the event of an advance, while the remaining two squadrons of the 57th

Group, the 64th and 65th, formed a separate wing under the operational control of No. 211 Group of the RAF, the equivalent of an AAF wing. With the addition of other pilots to the American squadrons, it was found advisable to form a second RAF fighter-control organization, and as a result, No. 212 Group came into existence. With two mobile fighter groups in the Western Desert Command, it was now possible to transfer one of them to some other section of operations at once, if there were need.[118]

The actual coordination of American tactical units with the RAF was facilitated by the activation of the U. S. Desert Air Task Force, about 2 weeks later (22 October). This force, of which General Brereton was personally in command, with Brig. Gen. Auby Strickland as his chief of staff, maintained a small staff at British Advance Air Headquarters in the Western Desert, in order that they might gain experience in the control of air forces in the field, and also might represent American interest there. At the time of its establishment, the Desert Task Force consisted of only two units—the 57th Fighter Group and the 12th Bombardment Group, which had arrived in the theater several months earlier. Although both of these units were attached to the RAF for operational purposes and took their places in its organization as wings, their orders were issued by General Brereton, on the basis of action requested by Air Vice Marshal Sir Arthur Coningham, at a daily morning conference regarding operations. This arrangement enabled the United States command to retain administrative control of its units and

brought excellent results, for the entire British staff proved most helpful, and expressed generous appreciation of the efforts put forth by the American squadrons.[119]

The air phase of the Battle of Egypt opened on 20 October, with the two-fold object of gaining mastery of the air, and of softening up the enemy by harassing his lines of communications.[120] By that time, the 57th Fighter Group had ceased to be considered a reserve. In fact, for the preceding 2 weeks much of its work had consisted of escort duty for light bombers concentrating on the destruction of airdromes at El Daba and Fuka, where the bulk of the German and Italian fighters were based, and on supply depots and troop concentrations behind the enemy lines.[121]

The opening assault on the El Alamein line by the ground forces of the Eighth Army, on the night of 23-24 October, introduced the second phase of the Battle of Egypt, throughout which the 57th Group furnished close cooperation by bombing and strafing army targets.[122] It was during this second phase of the Battle of Egypt that the major portion of the German and Italian air force supporting Marshal Rommel was put out of action on the ground, partly as a result of a new type of fighter-bomber raid introduced by the 57th Group. By attacking at dawn after having flown on the deck all the way to the target, the P-40's would catch the enemy by surprise and as a consequence his grounded planes sustained severe damage from bombing and strafing.[123]

The third phase of the Battle of Egypt began to take shape on the morning of 3 November, when Allied reconnaissance aircraft

reported that the volume of west-bound traffic on the coastal road between El Daba and Fuka indicated an enemy withdrawal.[124] As Marshal Rommel's army fell back, the air attack was maintained with such intensity that a regrouping of his disorganized forces for a stand at Fuka was out of the question. During the campaign from El Alamein through Tripoli, the fighter-bomber played a conspicious part. By preventing the concentration of German forces and thus precluding the possibility of the enemy's halting or making a counterattack, they also had a definite influence on ground force tactics.[125] When, after 5 November, Rommel's withdrawal developed into a rout, a part of the 57th Group joined selected Spitfires and Kittyhawks in harrying the remnants of the Axis armies in their westward flight. With this forward movement, the 64th and 65th American units passed, for the time being, from the operational control of No. 211 Fighter Group to that of the recently organized No. 212 Fighter Group, while the 66th Squadron continued to fly with No. 239 Wing.[126]

The group's rate of movement throughout the campaign was made possible by the maintenance of aircraft, even under the most adverse desert conditions. In the beginning, facilities for repair and upkeep at the bases were very poor indeed. The depot groups had little equipment at hand, and consequently clamored for tools and spare parts. Large pieces, such as wings and stabilizers, could be got from salvage, but small parts were obtained with more difficulty and were much more likely to be lost in the sand. Improvisation was frequently resorted to, and a great deal was learned from the British,

who had already had considerable experience in desert warfare. Despite severe sandstorms and a shortage of materiel, the record of serviceability for the entire campaign was slightly above 72 per cent.[127]

Closely associated with the work of the 57th Group was that of the 12th Bombardment Group, which had begun operations from its bases at Deversoir and Ismailia in mid-August. When Marshal Rommel launched his attack on the southern sector of the El Alamein line in late August and early September, more than a dozen planes from the various squadrons of the group were sent into the desert to cooperate with RAF and SAAF light bombers in pounding enemy tank and transport concentrations in the Deir El Ragil area. The effort of the B-25's at this stage could not be very extensive, for the strength of the detachment was only that of a token force. Yet the Mitchells operated at maximum capacity, with the loss of only one plane, and the excellence of their performance won for their crews a message of congratulation from Air Vice Marshal Coningham, the Air Officer Commanding.[128]

During the pre-offensive period, the 12th Bombardment Group participated in the repeated attacks on the enemy's advanced airdromes at El Daba, Fuka, and Sidi Haneish--raids which were most effective in limiting the enemy's air effort both before and after the Eighth Army launched its assault.[129] About the middle of October, however, the 12th Group received orders to move from Deversoir and Ismailia to Landing Ground 88, which was located some 50 miles behind the front lines. Lack of transportation for the entire group necessitated the

reduction of squadrons to 200 officers and men--a figure which allotted 15 combat crews, and an essential number of maintenance men, armorers, housekeeping personnel, and a very small headquarters to each unit. On account of the curtailment of staff, all administrative work, in both the group and the squadrons, was done at the rear base where the rest of the group remained until the end of November, when they, too, moved to Landing Ground 88.[130]

In the reorganization which preceded the Eighth Army's offensive on 23 October, the 12th Bombardment Group, like the 57th Fighter Group, became a part of the U. S. Desert Air Task Force. In order to facilitate operations still further, the B-25 squadrons were absorbed into the British light-bomber effort, forming, with a squadron of Baltimores, No. 232 Wing (RAF).[131] During the Battle of El Alamein, the B-25's were employed in the light-bomber shuttle service, and flew from five to ten missions a day over the front lines. In addition to troop and truck concentrations, the targets were advanced landing fields, Mersa Matruh, and Ghazal. For most of these missions a large part of the escort was furnished by the 57th Fighter Group, and most effective protection it was, too, for during the campaign no bomber was lost through enemy fighter activity.[132]

The forward light-bomber control, comprising an operations officer and his assistant, an army liaison officer from the Eighth Army, and such clerks as were needed, made up the operational section of the Advanced Air Headquarters. By working with the Advanced Fighter Control of No. 211 Group, this organization brought about close

cooperation between the two units, and, as a consequence, both fighter and bomber operations were maintained at maximum intensity. Whenever it was possible, the bombing schedule was pre-planned, for otherwise the airplanes could not be used to fullest advantage. The list of targets that the Army wished to have attacked on the following day was drawn up and sent to the Advanced Air Headquarters, which was located conveniently near the headquarters of the Eighth Army. After giving careful consideration to the matter, the operations officer decided which objectives would be bombed, and then consulted the group controller of the fighters to learn whether the necessary escort could be provided. On the basis of this conference final arrangements were made.

Each morning the Liaison Officer from the Eighth Army gave the squadron crews a complete report of the latest military situation, and told them what the Army intended to do that day. In this way, the airmen were kept informed of the exact position of the forward troops, and knew just where the most recent bomb lines were drawn. In working in such close collaboration with the Army, information of this sort was of vital importance, for in a good many instances targets were only a quarter or a half-mile in front of the British troops.[133] These painstaking efforts to keep ground and air forces in touch with each other, and to acquaint them with the part which each was to play, accounted in large measure for the success of their cooperative endeavor. Within the air arm itself, good relations between the British and American forces were also fostered by the fact that the

Western Desert Air Force usually knew what it wanted to do, and how to achieve its objective. As a result of this definiteness of purpose, it never indulged in useless missions.[134]

If, in the course of the day, the Eighth Army found itself held up at some place by an enemy gun position, a tank concentration, or any other such strong-point, it would ask that a given number of bombers be sent by way of assistance. This request would come down through the Tactical Bomber Control to Group Intelligence, and then to Squadron Intelligence, which would then brief the men going on the mission. Briefings were attended by the entire crew, because it was considered essential that each member of the unit should understand the nature of the assignment. All particulars concerning the area were given, including enemy gun locations and ack-ack positions. The standard character of many operations often made the repetition of details unnecessary at each session, but the bombing speed and the bombing altitude were changed frequently, and attention was also paid to the exact pin-pointing of the target. Since the B-25 was not heavily armed, and therefore could not operate without fighter-protection, considerable emphasis was placed upon the precise altitude and time of rendezvous with the fighter planes—a precaution which was most essential, for often several bomber formations would be picking up fighter escorts in the same area, at approximately the same hour.[135]

The large number of daily missions run by the 12th Bombardment Group during the Battle of El Alamein should be attributed partly to

the efficiency of the ground echelon, which had developed a discipline comparable, in effectiveness, to that of the air echelon. In each squadron there were certain men who did nothing but refueling, and others whose duty consisted entirely in the loading of bombs. By coordinating these operations it was possible to reservice and reload a flight of planes in a remarkably short period--on occasion, as little as 22 minutes from the time of landing and taxiing to the dispersal area. That was a shorter interval than was needed to interrogate the combat crews, to brief them, and to get them back to their planes.[136]

The B-25's continued to cooperate with the Bostons and Baltimores in bombing the Axis columns until 6 November.[137] After the El Alamein line had been broken through, the rapid advance of the Eighth Army soon carried the battlefield beyond the range of the B-25 bases. Since suitable targets were not again available until December, the intervening time was spent in training missions, with special emphasis on navigational flights, night landings, and aerial gunnery, for example.[138] The period was a most profitable one, for, in addition, experiments were made in equipping the B-25 with wing bomb racks, a modification which enabled it to do the work of several Bostons.[139] When the fighting had been carried beyond the El Agheila positions, the Mitchells moved forward and took up an estimated one-third of the medium- and light-bomber task.[140]

The current progress of the Egyptian campaign had given rise to the hope that the vigor of the war in North Africa might force the withdrawal of German units from Europe. Despite Soviet successes

of the previous year, the situation on the Eastern European front was very serious indeed, for a German victory there seemed dependent upon the ability of the Nazi armies to deal a crushing blow to the Soviet Union in the course of the next 12 months. Repeated demands for a second front in Europe reflected the anxiety of her leaders, while the diversion of British and American equipment to the U.S.S.R. in the face of the urgent requirements of other areas showed the importance of that theater to the cause of the United Nations. Throughout the summer of 1942, the German drive toward the Volga and the Caucasus had loomed large in the global struggle. If successful, such a thrust probably would make possible the seizure and exploitation of the oil resources of Baku, a tempting prospect to an enemy whose need for fuel was growing steadily more acute. Strategically, too, the conquest of this region would offer major advantages. Mastery of the Black Sea, secured by a southward sweep from Rostov to the Caucasus, would open water lanes of communication, and a foothold on the land bridge between Europe and Asia would increase substantially Germany's chances of a drive through Egypt, for the domination of the Middle East.

It was to thwart plans of this sort that Mr. Churchill had agreed to send an air task force to Transcaucasia, as a complement to the Soviet effort there--an obligation which he had undertaken several months earlier. In fact, British concern over the diversion of the 33d Fighter Group, and the temporary shortage of fighter aircraft in the Middle East, had been occasioned partly by the need for meeting

this promise.[141] As an American contribution to the air force for the Caucasus, it had been proposed that the United States furnish two units by the beginning of 1943--one, a transport group from the United States, and the other, a highly mobile, heavy bombardment group organized in the Middle East, in so far as possible.[142]

By way of implementing this plan, General Brereton was notified by General Marshall before the middle of October that from surplus personnel, aircraft, and equipment within his command, supplemented by additions sufficient to complete the unit, he should create the 376th Heavy Bombardment Group, composed of a headquarters squadron, and four tactical squadrons designated 512 to 515 inclusively.[143] The carrying out of this order involved the reorganization of the First Provisional Group, which General Brereton had hoped, for some time, to establish on a more permanent basis.[144] By the end of the month, the necessary changes had been effected, and as a consequence the 376th Group was activated in the early morning hours of 1 November,[145] largely from the air echelons of what had been originally the Halverson and Brereton Detachments. Provision for the minimum number of ground crews required for operations had been made, however, only at the expense of other groups, and additional personnel would therefore be needed to remedy the situation.[146] The new group was commanded by Col. George F. McGuire, who had taken charge of the First Provisional Group soon after Colonel Halverson's return to the United States at the beginning of August.[147] Since the combined Anglo-American air force intended

for Transcaucasia was not to take shape for some weeks, the 376th Group continued to operate in the theater much as had the First Provisional Group, with this difference, that eventually its aircraft would consist of B-24's only.[148] While this reorganization was taking place, it had been decided that a mission with joint representation should be sent from the Middle East to Moscow, in order to settle the operational role of the Anglo-American air force, and to make arrangements for the operational and logistical facilities needed on a front in the Caucasus.[149]

In the meantime, the disruption of the El Alamein line and the withdrawal of Marshal Rommel's armies early in November had forced the German bombers so far to the west that they no longer constituted a threat to Egyptian airdromes. The removal of this menace made possible the shifting of the B-17's and B-24's from the Levant to the Delta area.[150] The 376th Group, the first of the bombardment units to be transferred, left Lydda on 7 November and was established 2 days later on the sandy stretches of Abu Sueir, a well-equipped desert base which the RAF had placed at its disposal. By 13 November, the 98th Group also was located in the Canal district--Group Headquarters and the 345th and 415th Squadrons having moved from Ramat David to El Kabrit, and the 343d and 344th Squadrons from St. Jean d'Acre to Fayid. About the same time, No. 160 Squadron (RAF) from Aqir took up its station at Shandur.[151]

Transferal of the heavy bombardment groups to Egypt automatically resulted in the decision to bring the 323d Service Group to the Canal

area too. Since this unit was to act as an advanced depot in support of the Desert Air Task Force, a part of the group moved to the new desert base at Landing Ground 174 soon after the opening of the October offensive, and the remaining sections followed at the end of November. Support for the two heavy bombardment groups was supplied by service units which had just reached the theater. Delay in the delivery of equipment prevented these groups from beginning to function immediately, but their personnel were distributed to various stations--those of the 306th Group were assigned to the 98th Bombardment Group at Fayid and El Kabrit, and those of the 315th, to the 376th Bombardment Group at Abu Sueir. The arrival of an aviation company of military police at the same time made possible the furnishing of protection to these groups.[152] Security measures were very essential, for there was always danger from sabotage, and in preceding months the lack of police had necessitated, on occasion, the use of skilled personnel for the guarding of installations. In view of the length of time required to train a mechanic, an expedient of this sort proved most uneconomical.[153]

The greater degree of self-sufficiency which the USAMEAF attained from day to day was attributable, in part, to its ability to take control of its own supplies, an arrangement made possible by the placing of the 26th Depot Group at Deversoir, on the Suez Canal. Despite the advantages of this location, it was understood that the choice of site for the air depot would be determined by the development of communications to the west.[154]

When the heavy bombers were moved to Egypt, the weather forecast

station was transferred to Fayid, where its responsibility consisted in providing weather reports for both of the heavy bombardment groups. For purposes of observation, four stations were established at emergency landing fields in the Canal area, and from these posts weather reports were exchanged every hour during a mission. Owing, however, to the small number of surface reports received and the limited areas covered, only meager information was available to the local station. As a consequence, its forecasts lacked the accuracy required for carrying out successful raids far behind the enemy lines. In an attempt to improve the quality of these reports, a careful study of the weather charts prepared by the RAF at their central weather station in Cairo was made, and twice every day forecasts were sent to the A-3 officer of the USAMEAF, who scheduled or canceled missions accordingly. This practice brought about a substantial reduction in the number of mission failures attributable to bad weather. Until the establishment of a United States weather central at Cairo in January, the function of the forecast station at Fayid, and that of a subsidiary station soon to be located at the advance operational base near Tobruk, became one of 155
briefing crews with weather forecasts drawn up by the British in Cairo.

While these operational changes were in progress, General Brereton's administrative organization had gradually assumed fuller form. From time to time, officers had been added to his staff in recent months, and on 2 November the advance unit of an air force Headquarters and 156
Headquarters Squadron had reached Egypt. Although the AAF organizations in the theater were still operating under the designation of U. S. Army

Middle East Air Force, orders showed the assignment of individual officers to the "Ninth Air Force." Since there was fear that the continuation of such a practice might result in confusion, the immediate activation of the air force was urged.[157] This step was not accomplished until 12 November. On that day, Lt. Gen. Frank M. Andrews, who recently had replaced General Maxwell as commander of the U.S. Army Forces in the Middle East, announced the establishment of the Ninth Air Force, under the command of General Brereton.[158]

Despite the fact that the new organization superseded the USAMEAF, and hence embraced all the American air forces in the Middle East, it still needed both units and equipment--a lack caused, in large measure, by the shortage of shipping facilities. Late in October, the air echelon of the 79th Fighter Group had crossed to Africa by air. After being furnished with aircraft in the theater, it reached Cairo on 2 November and promptly joined the 57th Group in the Western Desert. The ground units came by ship 10 days later. The arrival of this group and the coming of a substantial portion of the 324th Fighter Group, just before Christmas, did much to relieve the fighter situation, which had given such concern to the British in September. Although a number of units within the Ninth Air Force were below authorized strength, one of the most pronounced deficiences was the absence of adequate administrative staffs for the commands. The Headquarters and Headquarters Squadrons of the Air Service and Fighter Commands did not reach North Africa until after the middle of December 1942 and early February 1943, respectively, while that of the Ninth Air Force itself was not complete until 22 December, when the Rear Detachment of the unit was merged with the Advance

Echelon which had been in Cairo for almost 6 weeks.[159] The Bomber Command was more fortunate. On 12 November, Brig. Gen. Patrick W. Timberlake formally assumed command of this organization after the announcement of its constitution, effective 10 November, had been confirmed on 12 November by the Headquarters of the Ninth Air Force.[160] With the rescinding of this order 2 weeks later,[161] the actual establishment of the IX Bomber Command was delayed until 27 November. At that time elements of the former Bomber Command, USAMEAF, were merged with the Headquarters and Headquarters Squadron of the 19th Bombardment Wing, a unit which had been assigned to the Ninth Air Force[162] and redesignated Headquarters and Headquarters Squadron, IX Bomber Command, upon its arrival in the theater.[163]

Owing to lack of men and equipment, it had not yet been possible for the Air Service Command to organize an Air Transport Section. Nevertheless, some essential war materials had been delivered by a few C-47 Douglas planes loaned to the command for this purpose. As the demands of units in the field increased, these cargo planes, from bases in the Levant, made round-trip flights approximating 1,200 miles a day.[164] Despite this effort, the needs resulting from the shifting of the battle line westward from El Alamein led the British, early in November, to request that a larger number of American transport planes be brought into service. In the emergency, it was decided that as many as 40 cargo airplanes and crews could be withdrawn temporarily from General FitzGerald's command for use in operations from the Delta

area.[165] Since the transfer of these aircraft from the ATC's Africa-Middle East Wing would greatly cripple the movement of supplies between Accra and Cairo, the 316th Troop Carrier Group, then in Texas, was ordered to proceed to the Middle East. This unit, composed of Group Headquarters and four squadrons (the 36th, 37th, 44th and 45th), under the command of Col. Jerome B. McCauley, was standing in readiness to join the Anglo-American air force designed for the Caucasus.[166] This circumstance enabled it, with its 52 freight-carrying planes and a full complement of personnel, to set off for North Africa at once. Upon reaching the Gold Coast, the 44th Squadron was detained at Accra for 10 days for the performance of two special missions, but the remainder of the air echelon arrived in Egypt on 23 to 25 November 1942. The coming of these squadrons did much to relieve the transport situation in the Western Desert, for they began operations almost immediately.[167]

Meanwhile, the extreme shortage of photographic films showing the activities of the Army Air Forces in the various theaters of operation had led to the organization and equipment of motion picture units. Until such time as one of these could be made available to the Ninth Air Force, General Brereton was notified that a detachment of six cameramen, with equipment, would be dispatched to North Africa.[168] Drawn from the 2d Combat Camera Unit, this small group formed the nucleus of the 9th Combat Camera Unit, which was activated in Egypt on 30 November 1942 but operated without a headquarters section until 1 February of the following year.[169] Although Cairo was the official station of the organization, members of the unit were located throughout the Ninth Air Force, in an effort to obtain a comprehensive record

of air activities in the theater. In a short time, it was expected that the results of this photographic work would prove valuable for operations in the field and that, in the United States, the pictures could be used to advantage for such purposes as training and public relations. As soon as the tactical situation was such that the effectiveness of combat units would not be hampered unduly, these cameramen would be authorized to fly on aerial motion picture missions.[170]

Before the end of the year, two other problems pertaining to the theater were settled. The preference of the Soviet Union for planes without crews had led to the withdrawal of the proposal for an Anglo-American air force for the Caucasus, on the ground that such an arrangement would leave well-trained squadrons without aircraft at a time when their services would be badly needed.[171] It was therefore decided that the 376th Bombardment Group, if not sent to India, should remain in the Middle East for the present.[172]

The second question had to do with the general problem of maintenance and repair. Owing to the zeal of Douglas mechanics, who had assisted in the erection of shop facilities and had undertaken operations with a small amount of salvaged Italian machinery and whatever hand tools were available, it had been possible to run the Gura depot on a limited scale for some time.[173] Its retention by the theater Services of Supply, however, had been a matter of contention since, on principle, it was believed by the Army Air Forces that all air depots should come directly under the Air Service Command.[174] In accordance with this general policy, the transfer of the Gura depot

to the jurisdiction of the IX Air Service Command was effected on 23 December.[175] Under the direction of Col. Harry S. Bishop, who had recently been appointed commanding officer of the depot,[176] its usefulness was increasing. The idea that it should function as a general depot for American supplies had been abandoned, however, for it was insufficiently staffed for such a project, and was now situated too far to the rear. Desirable as was the plan for a central distributing station, it was considered wiser under the circumstances to concentrate on the building up of an American supply and maintenance system, capable of serving American forces and of rendering support to the RAF, in an emergency.[177] It was General Brereton's hope that the time would not be far distant when the logistical organization would be so well developed that a strong air offensive could be conducted from North Africa against Europe.[178]

With this end in view, the heavy bomber groups had concentrated throughout the fall on the perfection of bombing patterns, and had succeeded in doubling the effectiveness of their attacks upon maneuvering targets.[179] The result of this increased skill was shown on 4 December 1942, when B-24's of both the 98th and 376th groups bombed shipping, dock installations, and units of the Italian fleet in the harbor of Naples. This attack marked the first of a long series of blows to be struck by American air power against Italy proper. In the logistical struggle which both sides were waging, the efforts of the Ninth Air Force hereafter would be directed not only toward preventing Axis supplies from being delivered in North Africa, but toward keeping them from leaving Italian ports on the continent.[180]

N O T E S

Chapter I

1. CM-IN* (4-29-41), Fellers to WD, Cairo, 25 April 41. A similar view was expressed by Maj. Henry Cabot Lodge in an interview on 7 July 1942, in Libya 9910, A-2 Library.

2. Ltrs., Chief of Materiel Div., to Gen. Brett, 13 and 21 Dec. 1940, in AAG 210.68. An estimate of the usefulness of such observers in England is given in memo for AC/S, G-2 by Gen. Arnold, 15 Jan. 1941, in AAG 210.68. See also CM-IN, Chaney to WD, 26 Aug. 41, in AAG 381.3.

3. Regarding the activities of these observers and the nature of their mission, see memo for AC/S, G-2 by OCAC, 4 Oct. 1940 and telg., Gen. Brett to CG GHQ AF, Langley Fld., 12 Dec. 1940, in AAG 201, Demas T. Craw; also interview with Col. Demas T. Craw, 11 May 1942, in U. S. 9000, A-2 Lib. Colonel Brower's contribution to the subject is indicated in a citation suggested in connection with the awarding of the Legion of Merit, conferred upon him posthumously. See memo for CG AAF by Brig. Gen. Edgar P. Sorensen, 25 Nov. 1943, in AAG 201, Gerald E. Brower.

4. See the President's Address before the Joint Session of the Congress, 15 Jan. 1941. See also the statement of the Secretary of State before the Foreign Affairs Committee of the House of Representatives during Public Hearings on H. R. 1776; and that of the Secretary of War before the same committee, on 16 Jan. 1941.

5. Edward R. Stettinius, Jr., Lend-Lease: Weapon for Victory, 90-92.

6. CM-IN, Fellers to WD, Cairo, 21 June 41; also his cables of 26 and 28 May 41; CM-IN, Perrin to WD, Cairo, 21 June 41. Mr. Karl Lueder, asst. operations manager for PAA-Africa, Ltd., ascribed losses partly to the method of convoying Tomahawks and Hurricanes by the much slower Wellington. As a result, the faster planes had to throttle back and circle. They also depended exclusively on the Wellington for navigation, so that, if the latter were obliged to land, they, too, were forced down. (Memo for Chief of Naval Opns. by District Intell. Officer, 3 ND, based on an interview with Karl Lueder, 15 Oct. 1941, in Africa 9000, A-2 Lib.) This practice

* Many cables were unnumbered at this period.

must have been modified later, for, in speaking of the ferrying of P-40's, Mr. Clark of Curtiss-Wright referred to the Tomahawks flying with Glenn Martins on the journey across Africa. (Report from Intell. Div., Office of Naval Opns., 15 Oct. 1941, based on a Report of the Middle East Aircraft Situation, with special reference to Tomahawks, made by G. B. Clark of Curtiss-Wright, 20 Aug. 1941, in U. S. 9570, A-2 Lib.) According to some observers, the number of accidents on the trans-African crossing might have been substantially reduced, if the British had organized an efficient ferry command when the route was opened. Final Report of Lt. Lewis B. Meng to AC/S, G-2, on his trip to Egypt, 3 Oct. 1941, in U. S. 9570.

7. Among the first of these officers were Lts. Lewis B. Meng and William W. Momyer, who left the United States in March 1941 and remained in the Middle East until August of that year. See their reports to AC/S, G-2, 3 and 6 Oct. 1941, in U. S. 9570. Also see ltrs., Maj. E. R. Quesada to Gen. Chaney, 18 and 22 Mar. 1941, in AAG 210.68. These men were flown across the Pacific to Egypt. According to their instructions, they were to report in Cairo to the Military Attache, who would put them in touch with the proper British authorities. It was understood that their assignment was to be with a British tactical unit. Lt. Meng's assignment was to observe operations and serve as instructor on the P-40's being furnished to the RAF. Lt. Momyer's mission consisted in rendering assistance to the RAF in the maintenance and assembly of P-40's. Evidently these men were considered under General Chaney's jurisdiction while in the Middle East, for in writing to him on 22 March 1941, Major Quesada says: "You have no doubt received warning orders on the subject of two officers and four enlisted men of your Command, who are to proceed to Cairo for the purpose of assisting the British in the maintenance of P-40's."

8. Telg. #1049, Piburn to Burns, Cairo, 1 Aug. 41.

9. Ltr., R. E. Gross (pres. of Lockheed Aircraft Corp.) to Col. J. M. Bevans (Dir. of Personnel, Hq AAF), in AAG 231. By the beginning of August 1941 there were, in the Middle East, representatives of Glenn Martin, Wright, Curtiss, Curtiss Propeller, Pratt & Whitney, and Allison. See telg. #1049, Piburn to Burns, Cairo, 1 Aug. 41. The advantage of direct communication between these representatives and their companies is well illustrated by the following example. At Port Sudan, the RAF local organization, in reporting a shortage of parts at the assembly plant there, was obliged to write, or dispatch a message to their headquarters at Khartoum, which then forwarded the request to RAF Headquarters in Cairo. From there it was sent to the U. S. Military Attache in Cairo, who, in turn, forwarded the message to the proper Army agency in Washington, where the problem was referred to the office concerned with the procurement of planes, and eventually the matter

would come to the attention of the manufacturing company. See O.N.I. 91, "Survey of Central African Seaports and Air Routes (27 Aug. 1941-5 Jan. 1942)," 135-136.

10. CM-IN-4879 (5-18-42), Cairo to AG, AMSEG #1110, pt. 3, 17 May 42. The presence of air observers is believed to have contributed substantially to the success of the policy of standardization which the United States had adopted with respect to aircraft and equipment being sent to the British. (Memo for A/CS, G-2, by Gen. Arnold, 15 Jan. 1941, in AAG 210.68.) For adoption of the policy, see Stettinius, Lend-Lease, 50-51. Since the P-40 was the first plane toward which the Joint Aircraft Committee directed its attention, the Middle East profited by this policy.

11. Interview with Paul Carpenter of Curtiss-Wright Corp., Feb. 1942, in U. S. 9000.

12. Ltrs., Maj. E. F. Gillespie to the Curtiss-Wright Corp., 15 Aug. 1941, in AAG 000-800, Africa; to J. L. Bunce of Pratt and Whitney Aircraft Co., and to W. B. Birren, of Wright Aeronautics Corp., 22 Aug. 1941, in AAG 231. See also CM-IN, Fellers to WD, Cairo, 21 June 41.

13. Concerning the public announcement of their presence in the Middle East, see memo for Bureau of Public Relations WD by Lt. Col. Arthur I. Ennis (attached to R&R, OCAC to C/A-2, 26 Nov. 1941), in AAG 231.

14. Ltrs., Chief of Materiel Div. to Gen. Brett, 13 and 21 Dec. 1940, in AAG 210.68.

15. Msg., Adams to CO, Wright Field, Dayton, 10 Jan. 41, in AAG 201, Edwin S. Perrin. Since the material was needed urgently, it was planned that Colonel Brower should return to the United States with the report. (Memo for Foreign Liaison Officer, G-2, by Maj. E. P. Quesada, AC Liaison Officer, 6 Feb. 1941, in AAG, 210.68). It was later decided that Colonel Brower should remain in the Middle East. Unfortunately he was killed at El Obeid, in the Anglo-Egyptian Sudan, on 20 April 1941, while ferrying to Cairo an American-made RAF plane assembled at Takoradi. Msgs., Fellers to WD, Cairo (#1863), 21 April 41; Cairo (#1879), 29 April 41, and Cairo (#1883), 1 May 41. See also Gen. Brett's letter of condolence, to Mrs. Brower, 23 April 1941, in AAG 201, Gerald E. Brower.

16. CM-OUT, Intell. Div., 2-B3 to MA, Cairo, 8 Feb. 41 (attached to R&R, 11 Feb. 1941), in AAG 210.68.

17. CM-IN, Fellers to WD, Cairo, 8 May and 9 June 41.

18. CM-IN (4-29-41), Fellers to WD, 25 April 41.

19. The loss of British aeronautical equipment in Greece was reported as 100% of all fighter planes, 60% of all bombers, and 95% of air-force ground equipment. (CM-IN, Fellers to WD, 30 June 41.) After the fall of Crete, the British were obliged to build up their air force completely, as not more than 75 planes of all sorts and conditions are said to have been saved. (Interviews with Lts. Meng and Momyer, Air Observers in Egypt, 1 Oct. 1941, in Libya 9910, A-2 Lib.) By the end of June, the situation had taken a turn for the better. CM-IN, Fellers to WD, 30 June 41.

20. CM-IN, Gen. Lee to WD, 7 July 41; interviews with Lts. Meng and Momyer, CM-IN, Fellers to WD, Cairo, 15 June 41.

21. CM-IN, Fellers to WD, Cairo, 2 May 41.

22. In fact, the battle of Crete had revived serious discussion of the necessity of a military air arm which would have as its mission the uninterrupted, direct support of ground troops. (CM-IN, Gen. Lee to WD, London, 17 June 41, par. 5.) In recognition of this need, Mr. Churchill, in a speech of 11 June, had stated that ampler provision for this kind of cooperation was to be included in the military program. (Ibid., par. 6; CM-IN, Fellers to WD, Cairo, 4 and 14 June 41.) For Admiral Cunningham's revision of opinion regarding the value of air support, see CM-IN (6-18-41), Fellers to WD, Cairo, 15 June 41. Unless 1,000 planes were received immediately, he felt that the Middle East could not be held.

23. Owing to the distance between airports, this route was open only to long-range bombers and transports. Stettinius, Lend-Lease, 146.

24. Ibid., 145.

25. In 1940, the Cairo-Takoradi ferry route was included in the British Middle-East Command. See Military Intell. Service, WD, Notes and Lessons on Operations in the Middle East (Campaign Study No. 8, 30 Jan. 1943.) A convoy of Blenheims first used this route in September 1940. The ferrying organization was later known as the "Aircraft Delivery Unit" and included pilots of many nations—British and Dominion, Polish, Yugoslav, and Free French. RAF Middle East Review, No. 1, 97-98.

26. Ibid.; also U. S. AAF Air Route Manual Natal, Brazil, to Cairo, Egypt, 1 June 1943.

27. Maj. Geoffrey Bonnell, "Safari on Wings," Air Forces News Letter, XXV, No. 2 (March-April 1942), 1-2.

28. At first it was thought that the West African terminal should be located in the neutral zone of Liberia. However, by the ruling of

the Attorney General that only territory contiguous to the British Isles was belligerent, Bathurst and Freetown were exempted. Memo for Chief, AAF by Maj. E. F. Gillespie, 14 Sep. 1941, 1-S-1, PAA Relations No. 1 in AFAMP Off. Services Br.

29. Stettinius, Lend-~~Lease~~, 148. For reference to the work done in connection with Brazilian airports, see letter of Col. Willis H. Hale to Maj. Gen. H. H. Arnold, 19 Sep. 1941, in 1-S-1, PAA Relations No. 1.

30. Stettinius, Lend-~~Lease~~, 146-148. In mid-July, Mr. Frank Gledhill, vice-president of PAA, had flown to Africa to inspect stations, check installations, and survey alternate routes. Don Wharton, "Our Life Line to the East," ~~Saturday Evening~~ Post, 1 Aug. 1942, 19.

31. Memo for C/AAF by S/W, 12 Aug. 1941, in 1-S-1, PAA Relations No.1. See also memo for Gen. Brett by Maj. E. F. Gillespie, 22 Aug. 1941, on South Atlantic and African Ferry Service, ~~ibid.~~ These contracts, signed by General Brett (Chief of the Air Corps), Colonel Volandt (contracting officer for the War Dept.), representatives of Pan American Airways Inc., and members of the British Air Commission, may be grouped as follows:

a. Contract between the U. S. Government and the Pan American Airways Co. concerning the South Atlantic Transport Route, running from Baltimore or Miami, via Brazil, to Bathurst, British Gambia. The initial equipment was to consist of one Boeing 314 purchased from PAA (owing to Neutrality Legislation) for $900,000, and leased to Pan American Airways, Inc. for operation.

b. Contract between the U. S. Government, Pan American Airways, Inc., and Pan American Airways-Africa, Ltd. relating to the trans-African transport route. Initial equipment was to be 10 DC-3's and 2 Lockheed Lodestars to be operated between Takoradi or Lagos, and Khartoum or Cairo, with a possibility of supplementary service between Takoradi and Lagos, to Bathurst. If additional equipment were necessary, it was thought that 8 other DC-3's would be available.

c. Contract between U. S. Government, Pan American Airways, Inc., and Pan American Air Ferries, Inc. regarding the ferrying of aircraft from the United States to the West Coast of Africa, and from there to Khartoum.

(1) According to current plans, Pan American Air Ferries, Inc., probably would be called upon to ferry 10 DC-2's and 2 Lockheed Lodestars for the trans-African service; 3 DC-2's, 12 Lockheed 10's, and 20 Lockheed 12's for

the British transport service, or a total of 47 planes, to be ferried from Miami to Bathurst by the end of the year. It was estimated that approximately 20 additional aircraft (from sources not then determinable) were to be ferried across the South Atlantic, as well as 8 other DC-3's, if required for the trans-African transport service. From 1 January through 30 June, it was expected that 45 Martin bombers (B-26's) would be ferried from Baltimore to Khartoum, via Brazil and Bathurst, and possibly other aircraft as well.

(2) In regard to the trans-African ferrying, it was thought that, from 1 Sep. 1941 to June 1942, 50 Blenheims and 150 pursuit ships (mostly Hurricanes with a few P-40's) per month would be ferried from Takoradi to Khartoum. According to Pan American Airways, it was believed that most of the P-40's had already been ferried.

d. Contract between Pan American Airways-Africa, Ltd. and the British Government relating to the trans-African transport route.

e. Contract between Pan American Ferries, Inc. and the British Government relating to the ferrying of aircraft to Africa. For the terms of the pilot's contract with PAA on the ferrying planes to the Middle East, see memo for C/AC by C/AS, AAF, 18 Oct. 1941 (attached to memo for 14 Oct. 1941, in AAG 361.) Changed conditions resulting from the entry of the United States into the war later necessitated revision of some of these contracts. For conditions at the West African assembly plants, see CM-IN, Fellers to WD, Cairo, 8 May 1941.

32. Don Wharton, "Our New Life Line to the East," Saturday Evening Post, 1 Aug. 1942, 19, 65-66.

33. Military Attaché's Report, "Trans-African Route," 12 Aug. 1942, in AFAEP, WP-III-F-12, North Africa, Bk. I; also Bonnell, "Safari on Wings."

34. Interview with Capt. W. H. Davidow, of PAA-Africa, Ltd., 23 Sep. 1942, in U. S. 9000.

35. The War Department-PAA-Africa, Ltd. contract of 12 Aug. 1941 provided for the release of an indeterminate number of AAF officers for civilian pilot service with PAA-Africa, Ltd. in Africa. Memo

for C/AS by Lt. Col. George C. McDonald, 1 Oct. 1941, in AAG 000.71. See also par. 5 of memo for Gen. Brett by Maj. E. F. Gillespie, 22 Aug. 1941, 1-S-1, PAA Relations No. 1.

36. Interview with George Kraigher, operations manager, PAA-Africa, Ltd., 13 May 1942, in U. S. 9000. See also msg. #1606, Kirk to Dept. of State, 17 Oct. 1941.

37. CM-OUT (12-3-41), Exec. 15 A1 to AMSEG, Cairo, #191, 4 Dec. 41; AAF, AWPD to OCAC, Intell., 17 Nov. 1941, in AAG 361; Office of Sec. of War to Asst. Chief of Materiel Div., Wright Field, 16 Dec. 1941, in AAG, 686; also memo to Maj. Gen. H. H. Arnold by Maj. Gen. James H. Burns, 19 Nov. 1941, in 1-S-1, PAA Relations No. 1. The routes to these points were:

a. Khartoum to Teheran or Ashkhabad (U.S.S.R.), via Wadi Halfa, Luxor, Cairo, Lydda (Palestine), and Habbaniyeh (Iraq).

b. Lagos to Rangoon, via Maiduguri, El Fasher, Khartoum, Port Sudan, Bahrein, Karachi, Jodhpur, and Calcutta. See memo for Col. George by Maj. E. F. Gillespie, 29 Nov. 1941, ibid.

The extensions to Basra and Teheran were the result of plans formulated after the return of the Harriman Mission from Russia in October. Both routes had been pioneered, however. General Brett's interest in the possibility of delivering military aircraft to the Middle and Far East by way of a South Atlantic-trans-African ferry route had led him to explore the route as far east as Basra, while on his mission to Egypt. His pilot on this expedition was Lt. Col. Caleb V. Haynes, who flew a B-24 plane. Colonel Haynes's flight from Bolling Field to Basra and return lasted from 31 August to 7 October 1941. (Ltr., Gen. Brett to Gen. Marshall, 18 June 1942, attached to memo for DC/S by AFCAS, 12 July 1942, in AAG 201 , George H. Brett. See also citation for the Oak Leaf Cluster, DFC, presented to Colonel Haynes, ibid. A route from Moscow to Cairo also had been explored by Lt. Louis T. Reichers about the same time. As pilot of one of the B-24's that had carried part of the Harriman Mission to Russia, he had plotted a homeward course across Africa and the South Atlantic. Pilot's Report by Lt. Louis T. Reichers [to ACFC], in Air Transport Command (1941-1942), A-2 Lib.

38. Interview with Lt. Col. M. B. Hahn at Hq. Air Service Command, 7 May 1943, in U. S. 9000.

39. Wharton, "Our Life Line to the East"; interview with Capt. Davidow.

40. AAF, AWPD to OC/AC, Intell., 17 Nov. 1941, in AAG 361. PAA gave

assurance to the War Department that competent personnel would be in charge of meteorological and communications facilities along the route. If its staff proved inadequate, or showed a lack of understanding regarding ACFC problems, PAA agreed that, in addition to its own personnel, those of the AAF should be stationed at African fields.

41. By 7 October 1941, more than 17 planes of commercial types had been delivered to the British in Africa by members of PAA's ferrying group. See Intercepted Correspondence, dated 7 Oct. 1941, attached to ltr., Lt. Frederick R. Merritt, Intell. Officer, AC Training Det., Coral Gables, Fla., to AC/S, A-2, 20 Oct. 1941, in Africa 9000.

42. Interview with Capt. Davidow. In an effort to increase deliveries, the British had adopted the practice of utilizing squadron pilots, for whom there were no planes at the time, to ferry equipment. (CM-IN, Fellers to WD, Cairo, 28 May 41.) Transport planes were extremely important in this theater. In September 1941, General Brett cabled to General Arnold that about 70 fighters, ready for ferrying, could not be moved from Takoradi because of the lack of transports for returning the ferry pilots. CM-IN (9-14-41), MA, Cairo, to Milid, #64, [?] Sep. 41.

43. In a letter to the Secretary of War, on 29 October 1941, the President had authorized the delivery of aircraft to any point within the African continent, by the Air Corps Ferrying Command. (ATC Chron.) Under the provisions of a presidential directive of 19 November 1941, this work had been undertaken by the Ferrying Command, both with its own personnel, and through a contract with Pan American Airways, which arranged for the return of crews to their bases after completion of the ferrying mission. The delivery of heavy aircraft to the Middle East therefore seemed assured. Ltr., S/W to Sec. of State, 25 Nov. 1941, in AAG 361; also that attached to routing sheet, 15 Dec. 1941, in Air AG 686, Southern Ferry Route; and memo for C/S by OCAC, 15 Dec. 1941, in AAG 361.

44. The first Liberator left for Cairo on 21 November 1941, but crashed at El Obeid 4 days later. The last of the five departed on 6 December. According to a prearranged plan, the crews of the first four aircraft, with the exception of the navigators, were to remain in Cairo for approximately 2 months to give the British technical instruction in the operation of LB-30-type aircraft. ATC Chron.; Temporary Duty Orders, AG to CG ACFC, 7 Nov. 1941, in AAG 210.68; and CM-IN (11-27-41), Adler to Arnold, WD #251, Cairo, 23 Nov. 41.

45. If it were not feasible to fly Baltimore planes (Glenn Martin 187's) across the South Atlantic, the British feared that there would be

a shortage of light bombers in the Middle East during the coming winter. This concern was accentuated by curtailment in the number of Bostons (A-20's) allotted to this theater, and by delay in the shipments of Baltimores. Through lack of flying experience in Glenn Martin 187's, Pan American Airways felt itself in no position to pass judgment on the performance of these aircraft on trans-oceanic flights. The question then was referred to the Army Air Corps. After much deliberation, it was finally decided that Baltimores and other short-range aircraft could be flown over the South Atlantic route, provided an intermediate airdrome with proper radio facilities were developed by both British and American governments. For this purpose, Ascension Island was chosen. Ltr., ACFC to Air Marshal A. T. Harris (attached to R&R, OCAC to C/AAF, 11 Dec. 1941), in AAG 361. Interview with Col. John E. Upston, 27 Nov. 1942, in Ninth Air Force Evaluation (Oct. 1942-July 1943), A-2 Lib. Ltr., Gen. Arnold to Air Marshal Harris (attached to R&R, ACFC to C/AC, 9 Dec. 1941), in Air AG 686, Southern Ferry Route; also Air Marshal Harris's reply to Gen. Arnold, 15 Dec. 1941, ibid.

46. Report of Meeting of War Plans Div., Air Staff, 13 Oct. 1941, in AAG 381. See also ltr., Col. S. C. Chamberlin to Gen. Moore, 23 Dec. 1941 (attached to routing sheet, AAF, A-2 to OCAC, ACFC, 15 Jan. 1942), in Air AG 686, Southern Ferry Route.

47. Ltr., S/W to Sec. of State, n. d. (attached to routing sheet, 15 Dec. 1941). The Kano airfield was only 75 miles from the French frontier, and supposedly only 100 miles from the nearest airdrome. For comments on the vulnerability of this section of the route, see interview with Col. Demas T. Craw. 6 July 1942, in Msg., Fellers to AG, AMSEG #124, Cairo, 29 Dec. 41, pts. 1-2.

Chapter II

1. Lack of transport facilities had seriously hampered the British offensive in the Middle East. Concern over supply bases and installations for African and Iraqi commands was reflected in the railroad program then under way. Four different projects comprised this effort:

   a. New lines were being run from Safari to Qena, and thence to the Nile Valley, by the meter-gauge railroad under construction--a route that would serve as an outlet for Sarafi's 1,000-ton daily import capacity. This undertaking was expected to be completed by March 1942.

   b. From the port of Aqaba, the 600 tons unloaded there daily were to be moved by motor carrier to Neqbashtar where railroad transshipment would connect with the trans-Jordan railroad, via Maan. It was estimated that this project would also be finished by March 1942.

   c. An extension was also being laid from Matruh south to the escarpment, thence west toward the base ending at Saphia. This enterprise was to be completed in December 1941.

   d. Contact between Syrian and Iraqi commands was being forged by a supply railroad running from Alqaim to Karbla. According to estimates made, this undertaking would cover about 15 months. In the meantime, a temporary solution to the desert supply problem was being found in air transport. Large trucks had proved quite impractical, as they cut ruts in the roads and raised a cloud of dust, which revealed the whereabouts of the caravan. Fellers to WD, Cairo, 11 Sep. 1941. See also his earlier message of 22 July 1941.

2. Stettinius, Lend-Lease, 138, 150, 291.

3. CM-IN, Fellers to WD, Cairo, 15 Aug. 41. Also report by Robert C. Gray, 23 Sep. 1941 [Gray Report] (attached to ltr., N. L. Kearney to Chief of Materiel Div., 6 Oct. 1941), in AAG 385. In the Delta area were three maintenance units designed for major overhaul work--Geneifa (Depot No. 107) and Abu Sueir (Depot No. 102) in the vicinity of the Suez Canal, and Abu Qir (Depot No. 103), about 10 miles northeast of Alexandria. These bases, of a rather permanent character, were extremely vulnerable to attack but had been built in their present locations because (1) bases near the Canal were considered necessary for its defense; (2) power, transportation, etc. had to be available to the bases; (3) the

British did not wish to antagonize the Egyptians by moving bases inland near centers of population. As a matter of fact, all parts of the Delta area were almost equally vulnerable to air attack. Report of G. B. Clark, [Clark Report] summarized in Office of Naval Intelligence F-1, 54-41 (S), 15 Oct. 1941, in A-2 Lib.

4. CM-IN (7-21-41), MO, Cairo, to MILID, #2044, 18 July 41. CM-IN, Kirk to Dept. of State [i.e., Piburn to Burns] Cairo, telg. #1050, late July 1941. The fact that, in a sense, the entire Middle East constituted an area of this sort, was to be impressed upon all mechanics sent to the theater in the future.

5. CM-IN (7-21-41), MO, Cairo, to MILID, #2044, 18 July 41.

6. Originally it had been planned that much of the maintenance and assembly work in the Delta area should be concentrated in a single large unit at Ismailia. As soon as this depot was well stocked and in operation, it became an excellent target for German bombers. After a severe attack, it had been burned, along with a large number of airplanes being erected there. When Air Vice Marshal Grahame G. Dawson took charge, his practical knowledge of war conditions led to the dispersal of all maintenance units throughout a space of about 50 miles. This system was not without disadvantages, however. Conference with Mr. Sam Irwin, Vice President of Curtiss-Wright Corporation, Foreign Representation [about 19 Jan. 1942], in Africa 9500 in A-2 Lib. Mr. Irwin left Cairo on 14 January 1942. (CM-IN, Fellers to WD, Cairo, 8 Oct. 1941.) Mr. Clark, of the Curtiss-Wright Corporation, had been greatly concerned at the reliance that the British placed upon the three large maintenance units, and at their lack of progress in setting up smaller repair and service units of a self-sufficient or mobile character. In his opinion, such a unit lost its value if it could not pack up and move (presumably by truck) 100 miles a night, in pursuit of the squadron to which it belonged. Mr. Clark had impressed upon Air Vice Marshal Dawson the need for ready transportation from dumps and assembly plants to the repair and service units and to the squadrons. This emphasis resulted in A. V. M. Dawson's request to Mr. Harriman for 15 CW-20's to be used as supporting aircraft. See Clark Report.

7. Geneifa, a base then in the process of construction, consisted of two identical areas a mile apart. (It may have been one of these that was later known as Kasfareet.) Upon completion, they were expected to overhaul 200 American engines per month, on the basis of one shift for a 4,000-man crew. By the middle of July 1941, one area was 100% complete as to buildings, 65% as to general equipment, and 10% as to special overhaul equipment. The other area was 80% complete as to buildings but was without equipment. Air Vice Marshal Dawson had asked Mr. Harriman to provide 1,200 American technicians for this base. In order to hasten the sending of

personnel and equipment, Wing Commander Messiter had been dispatched to the United States at the beginning of August. Ibid.

8. Gray Report.

9. CM-IN (7-21-41), MO, Cairo, to MILID, #2044, 18 July 41. The main assembly base in the Delta area had been located at Abu Sueir up to this time. It was a fixed depot left from the last war, and was used for overhaul and for supplying planes to the Western Desert. Practically no precautions against air attack had been taken by the summer of 1941. Airplanes ready for delivery were not dispersed or placed in crates, and consequently they provided an ideal target for enemy bombers. On one occasion an all-night raid resulted in serious damage to aircraft, engines, and a hangar. The depot had operated under adverse conditions, however. Many of the personnel were unskilled mechanics who had had no opportunity to attend special training classes. Their tools were obsolete and inadequate, and American equipment was new to all of them, even the more skilled technicians. As a consequence, it had taken 5 or 6 days to assemble a P-40 and make it ready for combat--a situation accounting, in part, for the fact that by the late summer of 1941 there were only three squadrons of Tomahawks operating in the Western Desert. The difficulty of keeping these equipped had made the outfitting of additional units out of the question. Slowness in production later was attributed largely to poor supervision, lack of assembly procedure, and failure to train men for specialized jobs, for after the arrival of American civilian personnel, the output was increased to two P-40's a day.

The transfer of the assembly plant to Port Sudan would improve conditions greatly, because the depot at Abu Sueir had also been responsible for giving the P-40's flown from Takoradi a thorough inspection. This examination, with modifications, frequently required 2 or 3 days, at a time when planes were badly needed at the front. With proper coordination, it was hoped that this work could be done in as few as 6 hours. The combination of an assembly plant and an overhaul base had not proved satisfactory, and individual units were recommended. With a shortage of mechanics, it had been necessary to interrupt assembly work to inspect planes coming from Takoradi--a situation resulting in loss of time and misuse of personnel. Report of Lt. William W. Momyer to AC/S, G-2, 6 Oct. 1941, in U. S. 9570; Clark Report.

10. In quest of a site for the plant, Air Vice Marshal Dawson had accompanied Mr. Clark of the Curtiss-Wright Corporation to Port Sudan. Needs in power, space, and the like were discussed. By 15 July, 10 Tomahawks had already arrived, and hangars were on the way. In the meantime, use was to be made of an old warehouse

in which a concrete floor could be poured. Before the end of August it was thought that the Curtiss-Wright crews would have reached Egypt, and work could be begun. (Ibid. See also memo for C/AS by Gen. J. H. Burns's office, 4 Sep. 1941, in AAG 686, Africa; CM-IN, Cairo to Dept. of State [i.e. Piburn to Burns], #1261, 31 Aug. 1941. Gray Report.) All of the tools and other equipment for this particular project had been carefully drawn up and approved by the Air Ministry in London early in 1941. Shipment was supposed to have been made in the spring. By December none of them had arrived, and consequently tools and materials of various kinds had to be picked up in Eritrea or Abyssinia, or improvised locally. O.N.I. 91, "Survey of Central African Seaports and Air Routes (27 Aug. 1941-5 Jan. 1942)," 132.

11. In a letter to the Curtiss Wright Corporation (Report 6, dated Cairo, 12 Aug. 1941, and attached to ltr., N. L. Kearney to Chief of Materiel Div., 6 Oct. 1941, in AAG 385), Mr. Paul Carpenter mentions the receipt of a complete set of prints. These came, he adds, through the efforts of the Army Air Corps, who had done much to win acceptance for the Tomahawks in the Middle East. See also the Gray Report. For the reluctance of the British Air Ministry to allow operational instructions and manuals to be distributed to RAF pilots or to be shipped with the airplanes, see Conference with Mr. Sam Irwin.

12. For the difference in time required to assemble a deck-loaded Boston and a crated P-40 at the Port Sudan erection plant, see O.N.I. 91. CM-IN, Cairo to Dept. of State, telg. #1592, 15 Oct. 41.

13. Gray Report. At one service and maintenance unit Mr. Gray says that "fifth-column" tactics resulted in a serious reduction in production. When the workmen involved were given dishonorable discharges, the situation improved decidedly.

14. Ibid.; also memo for C/AS by Gen. Burns's office, 4 Sep. 1941, in AAG 686, Africa. (This memo contains the substance of Colonel Piburn's message to General Burns, Cairo, #1261, 31 Aug. 1941.) See also O.N.I. 91,136.

15. Interview with Paul Carpenter, Feb. 1942, in U. S. 9000.

16. CM-IN, Gen. Lee to WD, London, 25 July 41; see also Gray Report. Lt. Lewis B. Meng reported that RAF squadrons equipped with Blenheims and Wellingtons hoped that their planes would be replaced by American bombers. Report of Lt. Meng, 3 Oct. 1941.

17. CM-IN, Fellers to WD, Cairo, 26 May 41; see also his message of 21 April 41. Various modifications in the P-40 had been found necessary. The RAF had experimented with the possibility of increasing its capacity. CM-IN, Fellers to WD, Cairo, 28 May 41.

They had also considered it necessary to provide armor for the protection of the battery in the Tomahawk, or to install a manual switch in the cockpit, in order that the guns might operate on the generator in case the battery were damaged by a hit. The position of the battery, in the tail of the plane, made it vulnerable because of the large number of hits scored. (CM-IN, Fellers to WD, 2 May 41.) They had also recommended that, on fighter planes, there be fewer instruments for the pilot to watch. Ltr., Paul Carpenter to Curtiss-Wright Corp., 12 Aug. 1941. For other recommendations see CM-IN (7-15-41), Fellers to WD, Cairo, 13 July 1941.

18. CM-IN, Fellers to WD, Cairo, 10 May 41. By the time Lts. Meng and Momyer reached Egypt, the Marylands in use were meeting with satisfaction. There had been some criticism of this plane's short range and lack of turrets, but its high speed compensated for these disadvantages. On missions in which pilots had no fighter protection, speed was often their only means of escape. If they could reach low altitude, their pilots felt that their planes could outrun any German fighters encountered. Report of Lt. Meng.

19. CM-IN, Perrin to WD, Cairo, 21 June 41. See also cables Fellers to WD, Cairo, 10 May 41, and Col. Cullen to WD, sgd. Fellers, 24 July 41.

20. Interviews with Lts. Meng and Momyer, 1 Oct. 1941, in Libya 9910. These officers left Egypt on 13 August 1941. By that time three squadrons were operating. Mr. Clark, in his report of 20 Aug. 1941, said that 222 Tomahawks had reached Takoradi en route to Egypt, and that about 355 had been delivered to the Middle East from all points. Accidents and enemy action had reduced the number of effective planes to 300. Fifty aircraft were being repaired and, of these, 25 probably would fly again. Since some Tomahawks had been assigned to training units, this meant that there were in the Middle East, at the time, enough P-40's to equip 4 squadrons, allotting 21 first-line and 42 reserve planes to each squadron.

21. On 25 April 1941, Major Fellers cabled to the War Department that previously 170 P-40's had been grounded because of mechanical defects. (Gray Report. CM-IN, Fellers to WD, Cairo, 26 May 41.) Before the end of the summer of 1941, the Kittyhawks had begun to reach Africa. For combat purposes, Mr. Paul Carpenter of the Curtiss-Wright Corporation considered it a much better airplane than the Tomahawk. Its superiority he attributed largely to the fact that the Kittyhawk had been evolved from actual combat experience whereas the Tomahawk was designed in peace times. See his interview of February 1942.

22. CM-IN, Fellers to War Dept., Cairo, 21 June 1941. Interview with Paul Carpenter. Lt. Meng, upon his return from Egypt, attributed

some of the criticism of the P-40 to the fact that its flying and landing characteristics differed from those of the aircraft which the RAF had been using. For example, its brakes were manipulated by foot instead of by hand; it had a stick in place of a spade grip; and a number of its instruments were different from those in the British plane. These were relatively small matters, but the accumulation of differences had resulted in the failure of RAF pilots to feel at home in the plane. As a consequence, it was between two and three months before the British began to like the P-40. By that time, however, they were fairly enthusiastic and admitted that it was superior to the Hurricanes which the British squadrons had been using in Egypt. Among the Australians, South Africans, and New Zealanders, the P-40 had gained favor more quickly. (See Report of Lt. Meng.) It was in the Syrian campaign that the value of the American fighter plane had been recognized first. (RAF Middle East Review, No. 3, 88.) By midsummer, the P-40 was looked upon with great favor, as the following paraphased message from Col. Moore-Brabazan, British Minister of Aircraft Production, to the Curtiss-Wright Corporation, 12 Aug. 1941, in U. S. 9570, indicates:

Air Marshal Tedder has told me of the brilliant performance of American aircraft in the Middle East, and has asked me to give you the following message: "As Air Officer Commanding in the Middle East, I send you the thanks of our fighter pilots for these grand machines, which have shown what they can do. My pilots tell me again and again how much they relish the performance, maneuverability, and range of the Tomahawk. Their successes against enemy fighters and bombers supply the proof. We can make use of all that you send us." See also ltr., Air Marshal A. T. Harris to Gen. Arnold, 25 July 1941, Ibid., on the success of the Tomahawk in the Middle East.

23. CM-IN, Fellers to WD, Cairo, 28 Nov. 41.

24. Personal Observations of Gen. Ralph Royce, Military Air Attaché, on a Visit to the Middle East, a report to MID, 24 July 1941, in Africa 9000. General Royce accompanied Mr. Harriman and his party to the Middle East. Although American aviation materiel and personnel in this theater were his chief concern, he made very effort to note things of general military interest. Lt. Meng also emphasized the importance of having American instructors, detailed to Egypt, arrive before the new equipment. See his report of 3 Oct. 1941.

25. CM-IN, Perrin to WD, Cairo, #1889, 5 May 41. See also Gray Report; Personal Observations of Gen. Royce; CM-IN, Fellers to WD, Cairo, 26 May 41. Upon his return from Egypt, Lt. Momyer reported that, in the beginning, 90% of the "crack-ups" were due to ground-looping. In 2 months, 1 squadron wrecked 28 planes in landing and lost only 3 in combat. The British attributed a great deal of this trouble

to faulty materiel--namely, that the landing gear could not stand the strain of the heavy impact. In Lt. Momyer's opinion, the difficulty had arisen through lack of skill, or knowledge, in a normal landing (i.e., with the tail not lowered). In a cross wind, they also allowed the plane to land sideways, thus shearing off the landing gear and causing the plane to ground-loop. (See Lt. Momyer's report of 6 Oct. 1941.) In the opinion of Mr. Gray of the Curtiss-Wright Corporation, the trouble with the landing gear of Tomahawks was attributed to the faulty method of landing used by most pilots--i.e., applying the brakes while the tail of the machine was still off the ground, during a two-point landing. Gray Report.

26. Ltr., Paul Carpenter to the Curtiss-Wright Corp., Cairo, 12 Aug. 1941.

27. Although designed for mobility, the British Maintenance Command in the Middle East incurred a good deal of criticism on the ground that it lacked that very quality. On the whole, its organization, in the summer of 1941, provided for maintenance on five different levels:

a. Advanced Landing Ground.--Here there were only gasing, oiling, and rearming facilities for airplanes going into battle. In an emergency, minor repairs also could be made. Because of danger from bombing attacks, no airplanes spent the night on this field.

b. Operational Landing Ground.--This field lay about 100 miles to the rear and served as the station for an advanced squadron, which was supposed to have at its disposal 16 planes ready for combat. Here were located armorers, and a sufficient number of mechanics to take care of emergency repairs. Any piece of work requiring more than 48 hours was expected to be taken over by the Repair and Salvage Unit, but often was not. Any airplane in need of a 30- to 90-hour inspection was to be flown back to a base landing ground. Personnel were supposed to be able to clear the field in 24 hours.

c. Base Landing Ground.--This base was located about 200 miles behind the operational landing ground. Here modifications were made, and inspections requiring from 30 to 90 hours. Most of the mechanics, and the remaining five of the advanced squadron's planes, were stationed at this field. When a plane was sent here for repairs, one of the reserve of five was to be flown forward to take its place in the squadron. The base landing ground was expected to be mobile enough to move within 48 hours, but as a matter of fact, it had a tendency to become semi-fixed.

d. Repair and Salvage Units (RSU).—There were several of these located between the advanced and operational landing grounds. Most of their work consisted in salvaging wrecked airplanes and transporting them back to their base. For salvage purposes, these units were equipped with a portable crane and three salvage trailer trucks like those used by comparable American units. In some cases the advanced RSU made engine repairs, if these were necessary to fly the plane out, and the rear RSU made whatever engine changes it could. On the whole, services of this kind were usually performed at the base landing ground of a squadron. Major overhaul work, however, was done at permanent maintenance or overhaul bases. Regardless of condition, airplanes were completely overhauled after having been in operation for 560 hours. Since spare parts for the P-40's were obtainable from salvage only, the work of the RSU was very important. Had more parts been available, a much larger per cent of the damaged aircraft might have been made operational.

e. Fixed Maintenance Unit (MU) or overhaul bases. Under this heading came such depots as Abu Sueir, Geneifa, and Abu Qir.

The Maintenance Command itself was located in the Middle East Headquarters in Cairo, and from this central office were issued all orders regarding technical changes and modifications. Since there was no experimental or service test station available at the time, the Maintenance Command received its instructions from the Air Ministry in London. Report of Lt. Momyer.

28. CM-IN, Brett, thru Fellers, to WD, Cairo, 22 Sep. 41; CM-IN (5-18-42), Crom to Arnold, AMSEC #1110, 17 May 42.

29. CM-IN (9-14-41), Brett to Arnold, thru MA to MILID, Cairo, #64, 22 Sep. 41. Wing Commander Messiter, who formerly had been in charge of the assembly of American planes at Geneifa, had left Egypt early in August to fill this position. (Ltr., Paul Carpenter to Mr. Horn, Cairo, 29 May 1941, attached to ltr., N. L. Kearney to Chief of Materiel Div., 6 Oct. 1941, in AAG 385.) Since he had had 5 years of experience in both tactical and maintenance units, he was considered an excellent person to serve as representative of the RAF in Washington. It was the responsibility of his office to handle all problems of priorities, procurement, equipment, and personnel. Both Air Marshals Tedder and Dawson wished Wing Commander Messiter to function under the direction of Lend-Lease. Colonel Piburn suggested that an officer from the Materiel Division be assigned to help him. See messages from Col. Piburn to Gen. Burns thru Minister Kirk to the Dept. of State, telgs. #1050, late July 41, and #1072, 4 Aug. 41. For recommendations regarding the enlargement of his duties, see General Brett's cable to WD, pt. II, 22 Sep. 41. Also CM-IN (9-14-41), Brett to Arnold, thru MA to MILID, Cairo #64, 22 Sep. 1941.

Soon after reaching the United States, Wing Commander Messiter was placed in touch with the Defense Aid Section of the Materiel Division--an association which he found most helpful. He also spent several days at Wright Field. Upon his return to Washington, he established an office at the headquarters of the British Air Commission. Believing that freedom of independent operation would further the success of his mission, he preferred not to attach himself to this organization, or to the Defense Aid or Lend-Lease offices. Memo for C/AC by Intelligence Div. (2-B-3) 10 Sep. 1941, in AAG 450, Africa.

30. Ltr., Carpenter to Horn, Cairo, 29 May 1941, in AAG 385. See ltrs., Robert C. Gray to N. L. Kearney, Cairo, 15 Aug. and 23 Sep. 1941, Ibid., CM-IN (6-19-41) MA to AC/S, G-2, Cairo #1986, 17 July 41.

31. Personal Observations of Gen. Royce; Report of Col. Harvey S. Burwell to AC/S, G-2, 31 Oct. 1941, in Africa 9000. See also later comments on a similar situation. CM-IN (5-17-42), Cairo to AGWAR, AMSEG #1110, 17 May 42.

32. The maintenance of American-manufactured equipment in Egypt as well as in England originally fell within the province of the Chaney Mission. Distance, however, made such an arrangement impracticable. Since existing conditions were unsatisfactory, General Brett had been instructed by General Arnold to draw up a complete plan of organization, and to outline the steps by which it could be accomplished. (Ltr., Gen. Arnold to Gen. Brett, 3 Oct. 1941, in AAG 334.8.) General Brett was accompanied on his mission to the Middle East by Col. Ray A. Dunn, Lt. Col. Edward M. Powers, 1st Lt. Jack W. Berry, and an aircraft crew headed by Lt. Col. Caleb V. Haynes. (Memo for AG by Gen. Arnold, 22 Aug. 1941, in AAG 210.68). According to the original plan, General Brett and his assistants were to go to London to discuss with British representatives questions pertaining to the establishment of depots in the Middle East. It was soon deemed wiser for the mission to proceed to Cairo, where it could meet with Air Marshals Dawson and Tedder. (Memos for AC/S, G-2, by Gen. Brett, 20, 27 and 28 Aug. 1941, in AAG 000-800, Africa.) After spending several weeks in this area, General Brett went to England, but returned to Cairo, on his way back to the United States, at the end of November. Ltr., John S. Winant to Gen. Arnold, 2 Dec. 1941, attached to Gen. Arnold's letter to Mr. Winant, 29 Dec. 1941, in AAG 210.68.

According to Mr. Kirk, the American Minister in Cairo, the work of the Mission in Egypt was considered of unusual effectiveness. General Brett's careful and energetic survey and his clear analysis of the situation, presented forcefully but with tact, made a deep impression upon all officials with whom he conferred. (Ltr., Mr. Cordell Hull to Mr. Henry L. Stimson, 2 Oct. 1941, attached to AG's

letter to C/AC, 7 Oct. 1941, in AAG 201, George H. Brett.) The excellent work that he did on his mission was highly commended by Mr. Winant, the American Ambassador to Great Britain. He characterized General Brett's views as sound, and based upon exact technical knowledge and an extended study of the terrain. See Mr. Winant's letter to Gen. Arnold, mentioned in preceding paragraph.

33. CM-IN, Brett, thru Fellers, to WD, pt. 2, 22 Sep. 41.

34. Ibid., pts. 4 and 5. See also memo for Gen. Fairchild from Exec. 4-B, Materiel Div., 24 Sep. 1941, in AAG 000-800, Africa. The contract with the Douglas Company was not signed until December. (CM-OUT, Mil. Mission to MA, Cairo [for Maxwell], 10 Dec. 1941. See also ltr., Col. W. F. Volandt to Douglas Aircraft Co., 18 Dec. 1941, in AAG 000-800, Africa; CM-IN [Piburn to Burns, thru Kirk to Dept. of State, Cairo #1072, 4 Aug. 41.) Construction work at Gura was assigned to the Johnson, Drake, and Piper Company, a New York engineering concern. For a description of the former Italian barracks buildings at Gura, see OSS Interview (No. 11) with Mr. Franklin Gledhill and Capt. George Kraigher, 20 May 1942, in Africa 8220, A-2 Lib.; and ltr., Maj. George G. Carey, Jr., to Col. Robert Walsh, 27 May 1942, in Africa 9000 (1942-1943).

35. CM-IN, Brett to Arnold, through MA to MILID, Cairo #118, 4 Oct. 41. See also O.N.I. 96, "General Report on Eritrea, 22 July 1942," and O.N.I. 91.

36. CM-IN (11-6-41), Perrin to Dunn, thru WD to MA, Cairo, 5 Oct. 41.

37. Telg. 1116, pt. 2 (8-12-41), Piburn to Burns, Cairo, 11 Aug. 41 attached to memo for Under Sec. of War by Maj. Edward P. Curtis, Sec. of Air Staff, 21 Aug. 1941, in AAG 450, Africa; and CM-IN, Adler to Arnold, thru Fellers to Mil. Missions, #340 (AMSEG #46), 9 Dec. 41.

38. Msg., Brett to Arnold, thru MA, Cairo, to WD, pt. 2, 22 Sep. 1941.

39. Ibid., pts. 2 and 3. The Air Depot Group supplements the work of salvage groups. It has all the equipment available to a materiel squadron of this kind, plus many additional pieces, so that it can perform higher than second-echelon maintenance. Mobile crews from a depot group are prepared to operate in the field. If, however, they find that an airplane is beyond reasonable repair there, they remove it to their shops where more extensive work can be done. Often one air depot group would serve as many as three air force combat groups. (See memo for Intell. Div., AAC, by Materiel Div., 15 Sep. 1941, in AAG 000-800 Africa.)

40. If the United States found that other projects could be undertaken,

it was suggested that the aircraft assembly depots at Basra and Port Sudan be given third and fourth priorities respectively. (Report of MA, London, Cable #108, 23 Oct. 1941, in Africa 9000.) The British had laid the foundations for the two depots and had already sent a considerable number of personnel to both places. This circumstance did not lessen their desire to have the United States take over these projects, for their resources in technical personnel were already stretched to the limit. . If relieved of this responsibility, RAF technical personnel could be sent forward into the battle area where they were badly needed. Ltr., Sir Charles Portal to Gen. McNarney, 18 Oct. 1941, in AG ETO file 381, Middle East. Given as a supporting document in Maj. Albert Lepawski's "History of the Air Service Command in the European Theater of Operations."

41. CM-IN, MA to MILID, #157, Cairo, 18 Oct. 41.

42. The training school for the A-20A was to be opened in the Delta area, about mid-September. (CM-IN, Kirk to Dept. of State, telg. #1169, Cairo, 16 Aug. 41.) On 25 July 1941, a combat and maintenance crew, selected for the A-20 plane from the 3d Bombardment Group, had been scheduled to leave New York for Cairo. (Travel orders, M. S. Fairchild to Air Staff Personnel Div., 19 July 1941 (attached to Orders of 21 July 1941, to AC/S, G-2), in AAG 210.68.) The school for the Boston-3 was to begin operation in the same general area, about the same time. To assist in its establishment an Air Corps officer and six enlisted men had arrived in Cairo on 9 August and were spending the intervening period in making a tour of the district. (R&R, AWPD to A-2, 20 Aug. 1941, in AAG 210.68). A similar plan was to be followed with the shipment of other types of plane to the theater.

43. Cable, Brett to Arnold, Cairo, 13 Sep. 41, in AAG 000-800, Africa. See also msg.,A-2, AAF to A-1, AAF Cairo, 13 Sep. 41; and msg., Brig. Gen. George E. Stratemeyer to CG, Air Corps Technical Training Comd., Tulsa, Okla., 17 Sep. 41, in AAG 210.68.

44. Ibid; msg., Perrin to Dunn, thru MA, Cairo, to MILID #157, 18 Oct. 41; also CM-IN, Perrin to Dunn, Cairo, #233, 12 Nov. 41.

45. R&R, OCAC, Intell. Div. to OCAC, Mil. Personnel, 30 Oct. 1941, in AAG 210.68. These men were expected to leave the United States about the middle of November. They were to be attached to the U. S. Military North African Mission. Evidently enlisted men in Egypt were also available as instructors, for, in commenting upon the school soon after its establishment, Mr. Irwin of the Curtiss-Wright Corporation referred to a teaching staff composed of three American officers and 10 technical sergeants. He reported that RAF

mechanics were enthusiastic about the courses offered and absorbed the instruction avidly. With only limited facilities available to General Adler, he thought that it would take a long time before this instruction could have effect in any wide sense. See conference with Mr. Irwin.

46. Lawrence S. Kuter, "Air Ground Support in North Africa," Air Force, XXVI (July 1943).

47. CM-IN (9-26-41), Brett to Arnold, thru MA, Cairo, to Exec. Officer, G-2, 25 Sep. 41. See also Orders, C/AC to AG, 28 Oct. 1941, in AAG 210.68. In the spring, Colonel Fellers had reported that a Western Desert Command, under Air Marshal Tedder, was being organized by the RAF. When sufficient materiel was received, it would comprise a fighter wing, a bombardment wing, and an army cooperation wing. CM-IN (5-1-41), Fellers to WD, Cairo, 1 May 41. CM-IN (9-26-41), Brett to Arnold, thru MA, Cairo, to Exec. Officer, G-2, 25 Sep. 41.

48. Memo for C/AS, OCAC by C/AS, AAF on Middle East depot requirements, 7 Oct. 1941, in AAG 000-800, Africa. The memo states that the staff of the U.S.M.N.A. Mission could appropriately be expected to accomplish a number of the things recommended by General Brett. (Mission set up 13 Sep. 41. Ltr, President to Maxwell, GO 15, USAFIME, 13 Sep. 42.)

49. Ltr., W. C. G. Cribbett to C/AC, 31 March 1942, in AAG 381.

50. Memo for C/AAF and Chiefs of Supply Arms and Services by AG, 19 Nov. 1941, in AAG 334.8. The following branches were included: Quartermaster Corps, Signal Corps, Ordnance Dept., Corps of Engineers, Air Corps, and Medical Dept.

51. Memo for A-2 Sec., Air Staff, by Lt. Col. James G. Taylor, 6 Nov. 1941, in AAG 210.68.

52. Ltr., Gen. O. P. Echols to Asst. Chief, Materiel Div., Wright Field, 22 April 1941, in AAG 210.68 Misc.

53. Memo for Gen. Martin F. Scanlon, by Lt. Col. Jack C. Hodgson, 2 Oct. 1941, in AAG 210.68.

54. Memo for C/AAF by Brig. Gen. Sherman Miles, 12 July 1941, in AAG 210.68. See also, msg., WD to SPOBS #6, 10 Aug. 1941, and Gen. Chaney's reply on 26 Aug. 1941.

55. As a remedial measure, it had been decided in the summer of 1941 that, in all administrative relations with Allied military authorities concerning training of personnel, lend-lease, air materiel, maintenance of equipment, and exchange of information on design and methods of manufacture, the War Department would be represented in Cairo by a new mission under the supervision of Col. Harvey S. Burwell,

then senior Air Corps officer in the theater. (Msg., AC/S, A-2 to Cairo for Col. Burwell, Cairo #31, 2 Sep. 1941; also synopsis of msg., Brett, through Fellers, to MILID, #60, Cairo, 13 Sep. 41, in AAG 210.68.) Made up of all AAF personnel on duty in Africa and the Middle East, this body was to be known as the American Air Force Delegation. (Ibid.). Owing to the return of Colonel Burwell to the States in October, and the formation of the United States Military North African Mission soon afterwards, this organization had a very brief existence.

For information concerning Colonel Burwell's assignment to Egypt, see memo for Foreign Liaison Officer, G-2, by Maj. E. R. Quesada, 7 May 1941, in AAG 210.68; memo for AC/S, G-2, 26 May 1941, ibid.; also memo of 4 May 1941, attached to memo for AC/S, G-2, 10 June 1941, ibid.; memo for Mr. Hopkins by Gen. Arnold, 2 July 1941, in AAG 201, Harvey S. Burwell.

56. In the fall of 1941, the War Department was said to be considering the transfer of certain matters formerly handled by the Military Attache to the Chaney Mission, which then recommended the establishment of a technical section, dealing with the modification and modernization of all military materiel, in accordance with operational requirements. Ltr., Gen. Arnold to Gen. Brett, 3 Oct. 1941, in AAG 334.8.

57. From the late fall of 1940, when the first air observers were sent to Egypt, this method had been very successfully used in the Middle East. Ltr., Gen. Arnold to Gen. Brett, 3 Oct. 1941, in AAG 334.8.

58. Msg., Gen. Brett to Gen. Arnold, thru MA, Cairo, to MILID, #69, 15 Sep. 41 (attached to memo for A-1, AAF by Col. Dunn, 22 Oct. 1941), in AAG 210.68.

59. CM-IN, Brett to Arnold, thru MA to MILID, Cairo #119, 5 Oct. 41.

60. See memo for C/AS, OCAC by C/AS, AAF, on Middle East depot requirements, 7 Oct. 1941, in AAG 000-800, Africa. General Brett's earlier suggestions had already been acted upon, for, at the direction of the Secretary of War, a cablegram was sent to him in London, stating that his recommendations had received favorable consideration, on the whole, and that a military mission headed by Brig. Gen. Russell L. Maxwell would arrive in Cairo early in November. (Memo for AG by Maj. Edward P. Curtis, 13 Oct. 1941, in 334.8.) Conversations had been held with General Maxwell and with the Chief of Engineers by the A-4 Division, with respect to some of General Brett's proposals. (Ibid.) For a note on the conclusion of a staff study in connection with personnel matters—military and civilian—pertaining to the air phase of the North African Mission, see memo for A-1, AAF by Col. Dunn, 22 Oct. 1941, in AAG 210.68.

61. Memo for C/AC by Col. Ray A. Dunn, 28 Oct. 1941, attached to Orders of 30 Oct. 1941, in AAG 210.68.

62. Memo for C/AS by Col. Ray A. Dunn, 4 Nov. 1941 (attached to 1st ind., 21 Nov. 1941), in AAG 334.8.

63. Stettinius, Lend-Lease, 215 ff.

64. The British had already taken major responsibility for development of the port of Bandar Shahpur.

65. See AAG 201, Raymond A. Wheeler. According to AGO, Officers' Records Branch, per Report of Change dated 18 Dec. 1941, General Wheeler arrived in Iran on 28 November 1941.

66. Memo for C/AS by Chief of A-4, 10 Nov. 1941 (attached to 1st ind., 21 Nov. 1941), in AAG 334.8. By May 1942, Col. Eugene F. Gillespie was serving in the capacity of Air Officer of the Iranian Mission. See msg. (5-31-42), Shingler to AGWAR, #AMSIR 298, Basra, 30 May 1942.

67. R&R, AWPD, AAF to C/AS, AAF, 17 Nov. 1941, in AFAEP, III-B, Organization.

68. CM-OUT (11-6-41), WD to MA, Cairo #126, 5 Nov. 41; CM-IN, Maxwell to AG, Cairo, 4 Dec. 41. General Adler is said to have reached Cairo on 22 November 1941, according to Report of Change under that date. By 10 December 1941, the Mission included 25 officers, 23 enlisted men, and 11 civilians (exclusive of contractors' personnel). CM-IN, Fellers to Mil. Mission, sgd. Maxwell, 10 Dec. 41. Among the officers were:

Brig. Gen. Russell L. Maxwell	-	Head of the Mission
Brig. Gen. Elmer E. Adler	-	Air Corps
Lt. Col. David E. Washburn	-	Signal Corps
Maj. R. E. Knapp	-	Corps of Engineers
Maj. Crawford F. Sams	-	Medical Corps
Maj. J. M. Colby	-	Ordnance
Lt. Comdr. C. T. Dickman	-	CEC
Lt. Col. Edwin S. Perrin	-	Air Corps
Lt. Col. E. W. Piburn	-	Infantry

69. Memo for C/AS, 28 Oct. 1941, in AFAEP, WP-III-F-12, North Africa, Bk. 1 (Oct. 1941-1 July 1943).

70. The Air Section of the Mission then included:

Gen. Elmer E. Adler	-	Chief, Air Section, USMNAM., and Air Representative, AAF, in the Middle East
Maj. Reuben C. Hood	-	Supply Officer

Maj. Daniel F. Callahan	-	Engineering Assistant
Maj. Sory Smith)		
Maj. Albert T. Wilson)	-	Technical School Assistants
2d Lt. Charles E. Murray)		
1st Lt. Gwen G. Atkinson)	-	Then on temporary duty in Egypt. It is recommended that they be assigned to the Mission.
Lt. Col. Edwin S. Perrin	-	Already on duty in Egypt, but to be transferred to the Mission.
M/Sgt. Floyd J. Leonard)		
S/Sgt. Howard J. Delozier)	-	Technical School Directors
S/Sgt. John C. Leseur)		
T/Sgt. Marvin B. Morton)		
Maj. John L. M. Des Islets	-	Engineer, Asst. to Maj. Callahan
Maj. Robert C. Oliver	-	Executive, Logistical and Tactical Matters.

On an R&R, OCAC, Intell. to OCAC, Mil. Personnel, 30 Oct. 1941, with incls., in AAG 210.68, the name of T/Sgt. George S. Walborn is given instead of that of Sergeant Morton.

Additions were made afterwards. See memo for C/AC, by Col. Ray A. Dunn, 28 Oct. 1941, attached to Orders of 30 Oct. 1941; and Orders, Maj. Ralph E. Fischer to AG, 30 Oct. 1941, with attached ltrs.; both in AAG 210.68.

71. Memo for C/AS by Chief of A-4, 10 Nov. 1941 (attached to 1st ind., 21 Nov. 1941), in AAG 334.8; CM-IN (12-13-41), Adler to Arnold, thru Maxwell to AG, #351 AMSEG 55, Cairo, 11 Dec. 41.

72. CM-IN (2-28-42), Adler to Arnold, thru Cairo to AG, AMSEG #498, 28 Feb. 42; CM-OUT (1-17-42), S/AS to MA, Kuibyshev, #136. 17 Jan. 42. See also Air Service Command interview with Lt. Lawrence Brown, 2 Oct. 1943, in U. S. 9000.

73. Great Britain had been especially desirous of having the United States assume responsibility for the assembly plant here. Although both countries had undertaken large commitments for supplying aircraft to the U.S.S.R., the majority of these airplanes would be of American manufacture. Their erection by American personnel would clearly add to the efficiency of the plan. Ltr., Sir Charles Portal to Gen. McNarney, 18 Oct. 1941, in AG ETO file 381 and given as a supporting document in Maj. Albert Lepawski's "History of the Air Service Command in the European Theater of Operations."

74. CM-IN-5276 (4-20-42), Adler to Arnold, thru Cairo to AG, AMSEG #860, 19 April 42.

75. Resistance had proved costly both in men and materiel. Msg., MA, Russia, to MILID (i.e., Faymonville to Spalding), #79, Kuibyshev, 21 Oct. 1941.

76. Rostov was again in Russian control by 29 November 1941.

77. Mr. Kirk, the American Minister to Egypt, urged the United States not to forget the Near East theater, while its attention was concentrated on the Orient. He also wished that consideration be given to the possibility of American units operating in North and West Africa, against the Axis. Memo for Chief of Intelligence Br. by Maj. Oliver J. Sands, Jr., 15 Dec. 1941.

78. CM-IN (4-29-41), Fellers to WD, Cairo, 25 April 41.

79. Memo for A-2, AAF by WPD, AAF, 10 Sep. 1941, in AAG 686, Air Bases, Africa.

80. CM-IN (10-6-41), Brett to Arnold, thru Fellers to MILID, #119, Cairo, 5 Oct. 41.

81. Ibid., see also memo for AC/S, WPD, by Brig. Gen. Carl Spaatz, 24 Jan. 1941. This memo is labeled as data of the RAINBOW No. 5 plan. It is a reply to a list of assumptions submitted earlier. These are attached, under 18 Dec. 1940.

82. Ibid. This stand for the independence of any U. S. Army group operating in the Middle East was one which General Chaney had taken in the summer. His argument was based on the fact that, except in questions of broad strategy and the allocation of units and major items of equipment, the British Forces in the Middle East were themselves independent. No control was exercised over them in matters pertaining to supplies, minor equipment, or tactical dispositions. Interestingly enough, he believed that the duties of any American force in the theater would be concerned mainly with distribution and technical assistance. CM-IN (8-26-41), Chaney to WD, 26 Aug. 41, in AAG 381.3. For General Brett's later insistence upon independence of United States forces, see msg., Brett to AGWAR, Java, 21 Feb. 42, and that from Thorpe to AGWAR, Java, 20 Feb. 42.

83. CM-IN (10-6-41), Brett to Arnold, thru Fellers to MILID, #119, Cairo, 5 Oct. 41.

84. For a report on the initial activities of the Air Section of the North African Mission, see memo for Gen. Arnold by Gen. Adler, 14 Dec. 1941, in U. S. 9900-9910, A-2 Lib. According to this account, the technical school was expected to open on 15 December.

85. By the middle of December 1941, General Adler reported that the

trans-African operations of Pan American subsidiaries had been absorbed into the jurisdiction of his office, and that the activities of the Air Corps Ferrying Command in the theater had also been taken under his supervision. (Ibid. See also interview with Gen. Adler, 18 Jan. 1943, in U. S. 9000.) The scope of General Adler's responsibilities are suggested in a cablegram which he sent to General Arnold in February 1942, requesting authorization for the retention of two transport planes. Without them, the Air Section would be very greatly handicapped, since contact with regional commanders was essential and air transportation afforded the only satisfactory means of travel. The headquarters of the Wheeler Mission lay about 1,110 miles away, and the distances to Karachi and Takoradi were 3,000 and 3,600 miles respectively. CM-IN, Cairo to AG, AMSEG #479, 24 Feb. 42.

86. The North Pacific air lane ran from San Francisco by way of Hawaii, Midway, Wake Island, New Guinea (Port Moresby), and Australia (Darwin), to the Philippines. CM-OUT, AF 1/253, Arnold to Brereton, 15 Jan. 42. See also ATC booklet, The Air Transport Command, 5-6.

87. In the fall of 1941, before the delivery of LB-30 aircraft to the British had been undertaken, consideration was given to the West African airdromes which might serve as a terminal for the trans-Atlantic flight. It had not been thought possible to make the trip until the Bathurst airdrome was improved, or the Waterloo airport, near Freetown, Sierra Leone, was completed. By the end of November, 1,200 yards of runway would probably be ready for use at Waterloo--a length considered inadequate for heavy bombers. At that time, the Bathurst airdrome was reported as having a 1,400-yard runway, of which 700 yards were steel gird, and the remainder of rolled laterite. By the end of December, it was expected that an additional 400 yards would be available. Of the two, the British considered the Bathurst field better, because of its greater length of runway, better approaches, and superior climatic conditions. See memo for TAG by Lt. Col. W. W. Dick, 24 Oct. 1941, in AAG 686, Air Bases, Africa; Cable #1187, Lee, thru MA, to MILID, London, 24 Nov. 1941.

In January, Takoradi was not regarded as suitable for the unloading of heavy, four-engine planes, for a B-17 had been damaged in sinking through the soft-surfaced ramp there. CM-IN, Cairo to AG, #579 AMSEG 216, 13 Jan. 41.

The Pan American base at Accra, about 100 miles away, was thought to meet all requirements, however. Besides, the Pan American Company's mechanics stationed there could service U. S. equipment, and other facilities such as fuel, radio communication from ground to air, housing, et cetera, were also available. CM-IN (11-27-41), Adler to Arnold, WD #251, Cairo, 23 Nov. 1941.

The rushing of heavy bombers to the Far East necessitated provision for increased stocks of oil and gasoline along the

ferry route since it was realized that the RAF would hesitate to reduce its supplies to the danger point. By the fastest means possible, supplies of this kind were sent from the United States to the West Coast of Africa, where they were distributed eastward to Maiduguri by BOAC and PAA agents. From Abadan to Port Sudan, additional tankers bore similar cargoes to Eastern Africa, whence the oil was transshipped westward as far as El Fasher. At all points on the air route, an attempt was made to build up a reserve of 1,000,000 gallons of 100-octane gasoline and proportionate amounts of lubricating oil. CM-IN (1-1-42), Cairo to AG, #448 AMSEG 124, Cairo, 29 Dec. 41.

88. CM-IN (1-22-42), Cairo to AG, #638 AMSEG 268, 22 Jan. 42. Every available transport plane not otherwise engaged was assigned to the movement of personnel and cargoes over the Far Eastern route. CM-OUT (2-28-42), ACFC to AMSEG, Cairo #699, 28 Feb. 1942.

89. The Air Transport Command, 5.

90. History, 19th Bombardment Group (H), App. B. See also Capt. Rowen Thomas, Born in Battle, 38.

91. The Air Transport Command, 5-6; CM-IN (1-22-42), Cairo to AG, #638 AMSEG 268, 22 Jan. 42.

92. Memo for Col. Craig by Col. H. L. George, 29 Jan. 1942, in AFAEP, IV-1-2, Air Routes: South Atlantic,Africa, Asia; memo for C/AS by AWPD, Additional Air Routes: South America, Africa, Indian Ocean, Australia, 2 and 3 Feb. 1942, ibid. Adams to CG, USAFIA, Melbourne AF #2/241 and AF #328, 14 and 16 Feb. 1942, in AAG 580.81; Memo for Col. Mosley, Foreign Div., ACFC by Brig. Gen. Robert Olds, 13 Feb. 1942, in Air AG, 686, Southern Ferry Route.

93. Msg., Brett to TAG, #465, 3 March 42.

94. CM-OUT-1931 (4-11-42), Kroner to MA Cairo, WD #799, 10 April 42; memo for Control Officer, Army Airways Communication System, Bolling Fld., by Maj. Robert M. Love, ACFC, 16 April 1942, in AAG 000-800, Africa.

95. General Brett arrived in Melbourne on 24 February 1942. Msg., Brett to AGWAR, #326, 24 Feb. 42. Msg., Emmons to AG, #1567, 6 Jan 42; Adems to Emmons, #904, 7 Jan. 42; Emmons to TAG, #2371, 20 Feb. 42.

96. General Brereton reached India on 25 February 1942, and assumed command of the Tenth Air Force on 2 March. (Msg. [3-4-42], Brereton to Arnold, AMSEG #516, Cairo, 2 March 1942.) In order to effect a necessary coordination of plans with the British, he established his headquarters in New Delhi.

97. By 20 February 1942, plans had been completed for the delivery of B-25's for the Soviet Union, at Basra. Msg., Cairo to AG, AMSEG #456, 20 Feb. 42.

98. R&R, Gen. Arnold to Gen. Spaatz, on Conversation with Sir Charles Portal, 1 Jan. 1942, in AFAEP, WP III-A-2, Great Britain No. 1 (28 Feb. 1941-30 Apr. 1942).

99. Directive memo for AWPD by Lt. Col. C. E. Duncan, on Combat Units and Personnel to the Near East . . ., 2 Jan. 1942, ibid; Comment for CG AAF, 18 Jan. 1942, in AFAEP, WP-III-Near East Overall.

100. CM-OUT (1-22-42), Adams, S/AS, to AMSEG, Cairo #435, 21 Jan. 42.

101. Comment for CG AAF, 18 Jan. 1942, in WP-III-Near East Overall.

102. Memo for C/AC by Lt. Col. John B. Cooley, on Task Forces for Britain and Cairo, 17 Jan. 1942, in AFAEP, WP-III-A-2, Great Britain, No. 1.

103. Memo by Representative of British Chiefs of Staff, on Movement of Two U. S. Pursuit Squadrons to Egypt, CCS 46, 20 Feb. 1942; R&R, AWPD to Gen. Spaatz, on Establishment of Two U. S. Pursuit Groups in the Near East, 24 Feb. 1942, in WP-III-Near East Overall.

104. Ltr., AWPD to Sir Charles Portal, 3 Feb. 1942, in WP-III-A-2, Great Britain, No. 1. See also memo for Gen. Arnold by Col. H. L. George, on Review of Strategic Considerations . . ., 7 Feb. 1942, ibid.

105. This position the British held until spring. The loss of ground which necessitated the line of defense running south from Tobruk was attributable, in part, to the withdrawal of troops and equipment to the Far East.

106. Memo by Representatives of British Chiefs of Staff, on Policy of Disposition of United States and British Air Forces, CCS 47, 22 Feb. 1942. The British were to accept responsibility for the completion of the existing program of air force expansion in the Middle East, which would enable them to give some support to Turkey, with a measure of assistance from the United States. If the strategic situation so required, the United States also was to be prepared to provide a heavy bomber force for the Middle East--from the first two heavy bomber groups allocated to the United Kingdom. Memo for Gen. Arnold, by Col. H. L. George, 7 Feb. 1942, on Review of Strategic Considerations . . . for Assignment of U. S. Heavy Bombardment Units to the Near East, in WP-III-A-2, Great Britain, No. 1.

107. Memo for AC/S, AWPD, by Maj. Gen. Millard F. Harmon, on AAF Plans

and Projects, 20 March 1942, in AFAEP, WP-III-B-1; memo for Gen. Arnold by O. A. Anderson (for Col. H. A. Craig), Air Units for Middle and/or Near East, 24 March 1942, in AFAEP, WP-1, General No. 2. COS 56, msg., from the Prime Minister to the President, on the Current Strategic Situation, 5 March 1942.

108. Memo for Gen. Arnold, on Cairo, 17 March 1942, in AFAEP, WP-III-F-4, Egypt.

109. CM-IN (3-20-42), MA, Cairo, to WD, 19 March 42. Colonel Fellers reported that, in the Middle East (Egypt, Palestine, Sudan), there were 2,077 planes, of which only 553 were serviceable. Seven hundred of those out of repair were said to be pursuit planes. Note to memo for Gen. Arnold by O. A. Anderson (for Col. H. A. Craig), Air Units for Middle and/or Near East, 24 March 1942, in AFAEP, WP-1, General No. 2.

110. It was understood that considerable difficulty in effecting quick repairs was being experienced in the Middle East, because of the lack of a parts-list catalogue, and failure to ship lists of parts with crates. The British had undertaken to prepare a catalogue of parts for American-manufactured aircraft. Until this publication was available, it was necessary for mechanics to use American catalogues, if any efficiency was to be achieved in the theater. Memo for Gen. Arnold by Col. H. A. Craig, 24 March 1942, in WP-III-Near East Overall, and WP-IV-C.

111. CM-OUT (2-28-42), ACFC to AMSEG, Cairo #699, 28 Feb. 42; CM-OUT-32 (3-4-42), Arnold to Brereton, #AF 3/53, 4 March 42; CM-IN (3-10-42), Wilson to AGWAR, New Delhi #68, 9 March 42.

112. This mission involved the moving of 30,000 gallons of gasoline and 500 gallons of oil to China for the use of General Doolittle's airmen. Two of the 10 DC-3's were engaged first in transferring 8,000 gallons of gasoline from Calcutta to Asansol--a task made necessary by the critical character of the tactical situation. Later this cargo was delivered to China, via Dinjan. Ltr., Mr. H. M. Bixby to Col. W. F. Volandt, 1 April 1942, in AAG 686, Air Bases, Africa; CM-IN-7009 (4-26-42), New Delhi (i.e. Brereton) to AGWAR, #Aquila 549, 26 April 42; History of India-China Ferry Command (1942).

113. For the general situation, see msg., Adler to Arnold(thru Cairo to AG, for AMSEG), 27 Feb. 42; msg., ACFC to AMSEG, Cairo #699, 28 Feb. 42. General Wheeler's designation was that of Commanding General, SOS, U.S.A.F. in China, Burma, and India. (Msg., AG to Brig. Gen. R. A. Wheeler, AMSIR #120, 28 Feb. 42.) At the same time Maj. Gen. Lewis H. Brereton was appointed Commanding General of the American Air Forces in India. Ibid.

114. CM-IN (3-4-42), Brereton to Arnold, AMSEG #516, Cairo, 2 March 42. At the end of February, General Adler was in India, where it was hoped that he might remain until the arrival of the Tenth Air Force. (CM-IN (2-24-42), Adler to AGO, thru Maxwell, AMSEG #476, Cairo, 24 Feb., 42; and CM-IN (2-27-42), Adler to Arnold, thru Cairo to AG, 27 Feb. 42.) His transfer was requested a few days later. (See the above cable and also CM-OUT-35 (3-5-42), Arnold to Brereton, #AF 3/89, 5 March 42; and memo for Chief, WPD, WDGS, to Gen. Arnold, 24 March 1942, in AAG 210.68, Mil. Detail.) Since his services had been eminently satisfactory, his transfer to the Indian theater was much regretted. CM-IN, (3-9-42), Maxwell to AGWAR, 8 March 42.

115. On 9 March 1942, General Adler cabled to General Arnold that he had just returned from India, where all information and plans previously prepared for General Brereton's region had been turned over to him. He himself was standing by, ready to give any further assistance that he could. (CM-IN (3-9-42), Adler to Arnold, thru Maxwell to AGWAR, #540 AMSEG, 8 March 42.) Apparently the efforts of the Air Section were quite extensive, for, on 13 March, General Maxwell requested that six enlisted men be commissioned as second lieutenants, and four as first lieutenants, in the Air Corps, because of outstanding excellence in performing duties connected with the organization of the Air Service Command in India. CM-IN (3-14-42), Maxwell to AGWAR, AMSEG #570, Cairo, 13 March 42.

116. The Tenth Air Force, 1942, AAF Historical Studies, No. 12 (Aug. 1944), 19, 82. See also History, Hqs., Tenth AF Service Command (1942).

117. Memo for C/S by Lt. Col. O. A. Anderson, acting AC/AS, AWPD, 5 March 1942, on Establishment of Air Service Commands in Africa, the Near East, Middle East . . . and China, in WP-IV, Far East Overall.

118. Memo for A-4, AAF by AWPD, 4 March 1942, in WP-III, Near East Overall.

119. Among the vanguard was the flight of heavy bombers and transports, which arrived in India on 7 April, under the leadership of Col. Caleb V. Haynes and Col. Robert L. Scott.

120. In all, 17 PAA pilots seem to have participated in the ferrying of these planes to China--8 in the first groups, and 9 who flew the last 9 planes to be assembled. Report No. 1 on planes for AVG and Chinese by Col. John Y. York, Jr., 6 March 1942, in AAG 450, India-China. See also CM-IN (3-18-42), Stilwell to AGWAR, #374, 18 March 42.

121. J/CCS 39/1, 14 March 1942. See also Colonel Fellers's comment, Cairo to MILID, #1149, 19 June 42.

122. CM-IN-1794 (5-7-42), Crom to Arnold thru Cairo to AG, AMSEG #1005, 6 May 42. For Colonel Crom's responsibilities, see note 117.

123. CM-IN-3010 (5-11-42), Scott, thru Fellers, to MILID, #1031, Cairo, 10 May 42.

124. When the question of retaining Curtiss and Douglas mechanics for another three-month period had been raised in January, it was pointed out that, in the future, it would be well to terminate contracts of this kind. For a small group of civilian mechanics, there seemed to be little need. Their status presented legal and other difficulties. For any extensive projects set up later, it was recommended that military personnel be used. Since the RAF had already acquired a good deal of experience, and the Air Section was undertaking a program of technical instruction, it was doubtless thought that matters could be handled in this way. Msg., Adler to WD, #556 AMSEG 208, Cairo, 11 Jan. 42.

125. CM-IN-1834 (5-7-42), Crom for Arnold, thru Cairo to AG, #1005, 6 May 1942.

126. See the following message sent, in parts, by Col. William H. Crom to General Arnold, on 17 May, in reply to an inquiry regarding repair and maintenance (CM-OUT-690): CM-IN-4834 (5-18-42), AMSEG #1110; CM-IN-5317 (5-19-42), a corrected copy of CM-IN-4908 (5-18-42); CM-IN-4879 (5-18-42); CM-IN-4909 (5-18-42); CM-IN-4856 (5-18-42); CM-IN-4870 (5-18-42).

127. With a capacity of 73 students, the attendance by weeks was 6, 33, 54, 65. With the capacity increased to 124, the attendance was 59, 71, 71, 80. CM-IN-1776 (5-7-42), Crom to Arnold, thru Cairo to AGWAR, #1005, 6 May 42. This message is part 1 of a report based on an investigation requested on 15 April, because it had been rumored that the RAF in Egypt had not taken advantage of the American Technical School. CM-IN-2791 (4-15-42), Arnold to AMSEG, Cairo, WD #540, 15 April 42. See also msg., Maxwell to AGWAR, AMSEG #1217, Cairo, 25 May 42, concerning the continuance of training for mechanics on American equipment.

128. CM-IN-2454 (5-9-42), Crom to Arnold, thru Maxwell to AG, AMSEG #1037, Cairo, 8 May 1942. See also the reply given in AMSEG #1037 (Out), 21 May 42.

129. CM-IN (3-9-42), Adler to Arnold, thru Maxwell to AGWAR, AMSEG #540, Cairo, 8 March 42.

130. CM-IN-5276 (4-20-42), Adler to Arnold, AMSEG #860, Cairo, 19 April 1942. At the end of February, General Adler had cabled to General Arnold that Abadan, as then planned, would be ready about 1 April. CM-IN (2-28-42), AMSEG #498, 28 Feb. 42.

131. Ibid. See also CM-IN-4834 (5-18-42), Crom to Arnold, AMSEG #1110,

pt. I, Cairo, 17 May 42.

132. CM-IN-5276 (4-20-42), Adler to Arnold, AMSEG #860, 19 April 42.

133. Ibid. See also CM-IN, (5-1-42), Shingler to AGWAR, AMSIR #204, Basra, 30 April 42; CM-IN-1664 (6-6-42), Shingler to AGWAR, AMSIR #308, Basra, 4 June 42.

134. For arrangements regarding the delivery of B-25's, see CM-OUT (2-20-42), AMSEG #456, 20 Feb. 42. There were to be 72 B-25's delivered to the Soviet Union at Basra. (CM-IN (3-20-42), Adler for Echols, Olds, and Arnold, AMSEG #609, Cairo, 18 March 42.) They were to be considered U.S.S.R. property upon leaving Miami. Under lend-lease agreement, no replacement was provided for any airplane assigned to a foreign nation, after it was turned over to ferry personnel, in the event that complete replacement was required. The A-20C planes, on the other hand, were regarded as property of the U.S.S.R. when they were prepared for loading at the port of embarkation. (CM-OUT 6422 (5-29-42) AFASC to AMSIR, Basra #229, 28 May 42.) By 26 March 1942, General Adler cabled to General Olds that the delivery of B-25's to the Soviet Union at Shaibah was well in hand. Deliveries were made by the ACFC pilots to the Wheeler Mission, which was the only accredited agency with whom the U.S.S.R. would deal. Assisted by 12 men from the American command, the RAF was then performing all maintenance. (CM-IN (3-26-42), Adler to Olds, AMSEG #656, Cairo, 26 March 42.) By 19 April, four B-25's had been received. CM-IN-5276 (4-20-42), Adler to Arnold, AMSEG #860, Cairo, 19 April 42.

135. CM-IN (3-20-42), Adler to Echols, Olds, and Arnold, AMSEG #609, Cairo, 18 March 42. CM-IN-0495 (5-2-42), Shingler, thru Maxwell, to AGWAR, AMSEG #972, Cairo, 1 May 42.

136. CM-IN-5276 (4-20-42), Adler to Arnold, AMSEG #860, 19 April 42. See also CM-OUT-6422 (5-29-42), AFASC to AMSIR, Basra #229, 28 May 42.

137. CM-IN-5962 (6-19-42), Crom to Arnold and Miller, thru Maxwell to AGWAR, AMSEG #1501, Cairo, 18 June 42; and reply to this message, 21 June 42. See also ltr., Gen. Arnold to Col. Eugene F. Gillespie, of the U. S. Mil. Mission to the U.S.S.R. in Teheran, 18 June 1942, with incls., in AAG 000-800, Misc., Africa.

138. CM-IN-5276 (4-20-42), Adler to Arnold, AMSEG #860, 19 April 42.

139. CM-IN (5-18-42), Crom to Arnold, AMSEG #1110, pt. 7, 17 May 42.

140. Memo for CG AAF by Col. T. J. Hanley, Jr., AC/AS, A-4, on Organization of African Theater of Operations, 12 May 1942, in WP-IV

Far East Overall. See also Report to the CG AAF Ferrying Command, by Lt. Col. Louis S. Gimbel, 3 May 1942, in Air Transport Command Book (1941-1942), A-2 Lib.

141. Late in December 1941, the Air Corps Ferrying Command had been reorganized into General Headquarters, and Domestic and Foreign Divisions, later called Wings.(See GO No. 3, 30 Dec. 1941.) The Foreign Division, in turn, was subdivided into sectors. Of these, two were located in Africa. The West African Sector included the stations at Freetown, Monrovia, Takoradi, Accra, Lagos, and Kano, with Accra as the point of control. From headquarters at Khartoum, the officer in charge of the East African Sector directed ACFC activities from El Fasher to Karachi, along the route running by way of Cairo, Baghdad, and Basra, as well as along that extending across southern Arabia to India. See GO No. 2, Hq. Foreign Division, ACFC, 15 Jan. 1942. For a fuller discussion, see AAF Historical Studies, No. 33, Administrative History of the Ferrying Command, 29 May 1941-30 June 1942.

142. CM-OUT (2-12-42), ACFC to AMSEG, Cairo #580, 11 Feb. 42. See also paraphrase of ltr., Lt. Gen. P. G. Kemp to CG, Foreign Div., dated 11 Feb. 1942, in ATC Central Files; and CM-OUT (2-21-42), Olds to Adler, thru ACFC to AMSEG, Cairo #650, 21 Feb. 42. For General Adler's assumption of duties connected with PAA and ACFC operations in Africa, see n. 85, Chap. II.

143. CM-OUT (2-8-42), Arnold to Adler, thru AWPD to AMSEG, Cairo #556, 8 Feb. 42. See also AGO letter 160 (2-15-42) MSC-D-M 18 Feb. 1942, on closing out overseas contracts etc. For the termination of the contract on 15 Dec. 1942, see Historical Report, 1202d AAF Base Unit, CAFD-ATC, 30 Jan. 1942-30 June 1944.

144. CM-OUT-2059 (4-11-42), Marshall to Maxwell, AMSEG, WD #525, 11 April 42. See also ltr., AG 322.2 AAF Ferrying Command (5-29-42) MO-F-M, 6 June 1942.

145. Memo for CG AAF, by Col. T. J. Hanley, 12 May 1942, on Organization of African Theater of Operations, in WP-IV-Far East Overall.

146. For a detailed outline of General FitzGerald's duties, see R&R Brig. Gen. H. L. George to Brig. Gen. Shepler W. FitzGerald, 15 June 1942, Letter of Instructions, in AFAEP, 1-C, Assignments, Bk. 2 (1 Jan-31 Dec. 1942).

147. For General FitzGerald's departure from Bolling Field on 16 June 1942, see Report of Change of Station under that date. The time of his arrival in Accra and his formal assumption of the AAF Ferrying Command on 27 June 1942 are given in Historical Report, 1202d AAF Base Unit.

By letter AG 320.2 (6-13-42) MS-E.M., 16 June 1942, on Command in the Africa-Middle East theater, General FitzGerald also was assigned to duty as Commanding General U. S. Army Forces in Central Africa (USAFICA), a newly created command with headquarters initially at Accra. With the exception of personnel of the AAF Ferrying Command (see paragraph 2 of the above letter), this command included all U. S. Army troops and installations in Gambia, Sierra Leone, Liberia, the Gold Coast Colony, Nigeria, French Equatorial Africa, the Belgian Congo, Uganda, Kenya, Italian Somaliland, Tanganyika, and Madagascar.

For General FitzGerald's assignment to the USAFICA command [in addition to his duties as Commanding General, Africa-Middle East Wing, AAF Ferrying Command], see msg., Ulio to MILOBSERVER, Accra, WD #60, 17 June 42. For his letter of instructions countersigned by Brig. Gen. T. T. Handy for AC/S, OPD, and signed by Gen. G. C. Marshall, 20 June 1942, see AFAEP, 1-C, Assignments, Bk. 2 (1 Jan.-31 Dec. 1942).

148. With the checking of Field Marshal Rommel's advance in February, activities dwindled to a series of harassing operations. A month of heavy sandstorms checked operations from the middle of April to the middle of May. Soon thereafter, while the British were contemplating an attack, General Rommel launched an offensive of his own. In its early stages, operations were favorable to the British. On 26 May, however, the German forces swept around the southern flank of the British defenses at Bir Hacheim, and drove behind them northward toward the coast, between El Gazala and Tobruk. On 13 June, British forces were drawn into an ambush. Of 300 tanks in action, 230 were lost—without a corresponding damage to the enemy. That day marked a turning point in the campaign.

149. CM-IN-7847 (6-24-42), Alexandria (Rockwell) to OPNAV 222010, NCR 0353, 23 June 42.

150. CM-OUT-1493 (6-6-42), OPD to MA, Cairo #875, 5 June 42.

151. For a review of the various British and American plans setting forth methods by which reinforcements might be moved to the Middle East, see CCS 84, Item 1, on U. S. Reinforcements for the Middle East.

152. The Memorandum for Agreement between General Arnold, Rear Admiral Towers, and Air Chief Marshal Portal, on 21 June 1942, was not seen by the author. For its adoption, however, see CCS 61/1, on Aircraft Situation in the United Nations, 2 July 1942. According to the Arnold-Slessor-Towers agreement, six fighter groups were allocated to the Middle East in September 1942. See CCS 61/1 18 Sep. 1942. The possibility of using American civilians in Egypt for maintenance was investigated, in the hope of furthering plans for the arrival

of American units. CM-OUT-5421 (6-22-42), AFABI to AMSEG, Cairo #1112, 22 June 42.

153. CCS 87/2, 10 July 1942, on Shipping Implications of Proposed Air Force Deployment, Sec. 1. See also CCS 87/1 (24 June) and CCS 87 (30 June), for additional material on shipping arrangements.

154. J/CCS 39/1, 14 March 1942. See also CM-IN-1149 (6-19-42), Fellers to WD, 19 June 42.

155. CM-OUT-5700 (6-23-42), Marshall to Stilwell, New Delhi #618, 23 June 42. Owing to lack of engines, a critical maintenance situation existed in India at the time. (Msg., (6-21-42) Adler to AFASC, thru Brereton to AGWAR, Aquila #2151, New Delhi, 20 June 42. See also CM-IN-7957 (6-24-42), no signature, Aquila #2311, 24 June 42.) Only 10 bombers could be assembled at the moment. Of these 7 were to depart at once, and the remaining 3 would follow as soon as they were made ready. As engines and other equipment became available, additional planes would be forwarded, too. (CM-IN-8183 (6-25-42), New Delhi to AGWAR, #Aquila 2319, 25 June 42.) In all, 18 combat planes seem to have been transferred to the Middle East--11 B-17E's, 6 B-24D's, and 1 LB-30. (CM-IN-11508 (8-30-42), New Delhi to AGWAR, Aquila #4359, 29 Aug. 42--corrected copy of CM-IN-11266 (8-30-42).) General Brereton was notified early in July that he was authorized to obtain bombs from India, if the situation demanded such action. CM-OUT-2279 (7-9-42), CG, AMMISCA, New Delhi, #62, 8 July 42.

156. A minimum staff and the combat crews comprised a total of 60 officers and approximately 165 enlisted men. Ibid. Actually the number of enlisted men may have been only 160 (139 from the 9th Bombardment Squadron, and 21 airplane and engine mechanics from the 436th Bombardment Squadron). CM-OUT-5534 (9-16-42), OPD, thru Marshall, to Maxwell, AMSME #839, Cairo, 16 Sep. 42.

157. CM-OUT-6566 (6-26-42), AFADS to AMSEG #1154, for Brereton and Stilwell, 25 June 42; also CM-IN-3426 (7-10-42), Cairo to AG, AMSME #168, 9 July 42.

158. CM-IN-8183 (6-25-42), New Delhi to AGWAR, Aquila #2319, 25 June 42.

159. CM-OUT-4189 (6-17-42), Ulio to AMSEG, Cairo, WD #1066, 17 June 1942; ltr., AG 320.2 (6-13-42) MS-E.M., dated 16 June 1942, on Command in African Middle Eastern Theater. According to the instructions of this letter, the U. S. Army Forces in the Middle East as a command included military jurisdiction over all U. S. Army troops and installations in Egypt, such parts of Libya as were occupied by forces of the United Nations, Anglo-Egyptian Sudan, Abyssinia, Eritrea, British Somaliland, Syria, Palestine, Trans-Jordan, Arabia,

Turkey, Iraq, and Iran—with two exceptions (noted in paragraphs 2 and 3 of the letter). The first of these exceptions pertained to the activities and facilities of the AAF Ferrying Command, exclusive of the security measures and combat emergencies authorized by letter, AG 322.2, AAF Ferrying Command (5-29-42) MO-F-M, 6 June 1942. The second exception had to do with the Special Mission of Maj. Gen. John N. Greely in Iran—an agency operating directly under the War Department.

160. CM-IN-7222 (6-22-42), Maxwell to SPLLM, thru Cairo to AGWAR, AMSME #6, 22 June 42. General Maxwell believed that the creation of this new command would clarify the status of various semi-dependent groups and activities which British Headquarters in the Middle East already looked to him to control and administer. Among these, he mentioned students at British schools, observers with tactical units gaining combat experience, and the special liaison duties of the military attaché in Cairo. The dissemination of war information and the collection of strategic data by detached semimilitary agencies were activities causing considerable concern to responsible British officials. Undoubtedly it would soon be necessary to define their relationship to the new command. (CM-IN-5598 (6-17-42), Maxwell to Marshall, thru Cairo to AG, AMSEG #1494, 17 June 42.) Colonel Hodges, an engineer already in the theater, was designated as acting chief of the U.S. Military North African Mission on 19 June 1942. CM-IN-7035 (6-22-42), Cairo to AGWAR AMSEG #1533, 21 June 42.

161. CM-IN-1903 (6-29-42) Cairo to AG, AMSME #36, 29 June 42.

162. GO No. 4, USAFIME, 28 June 42. See also CM-IN-9610 (6-29-42), Cairo to AG, AMSME #35, 29 June 42; and GO No. 1, USAMEAF, 28 June 42.

163. CM-OUT-5701 (6-23-42), OPD to AMSEG, Cairo #1118, 23 June 42.

164. AG ltr. 320.2 (6-26-42) MS-AFACT, dated 27 June 1942, "9th Air Force," and ltr., Maj. Gen. Ulio to CG USAFIME, 27 June 1942. When the organization of the Ninth Air Force was first undertaken in January 1942, it was destined for North Ireland. (Ltr., AAG to CG AFCC, 9 Jan. 1942, attached to R&R, A-3, AAF to AAG, 9 Jan. 1942, in Air AG 320.2, 9th AF.) The groups to comprise the Air Force were: 31st and 54th Pursuit (I), 46th Bombardment (L), 12th Bombardment (M), and 67th Observation. (Memo for CG AFCC, by Col. W. W. Dick, 10 Jan. 1942, ibid.) Before it was scheduled for movement overseas, the adoption of project BOLERO changed the strategic plans for the British Isles. The air task force was therefore dismembered, and its combat units widely scattered. In the transfer, the 12th Bombardment Group was assigned to Egypt in the summer of 1942. (See Chap. III of this study, and AAFRH-2.)

Meanwhile, however, the Headquarters and Headquarters Squadron, 5th Air Support Command, had been redesignated Headquarters and Headquarters Squadron, Ninth Air Force, by AG letter 320.2 (4-5-42) MR-M-AF of 8 April 1942. This unit was later transferred to Bolling Field, Washington, D.C., in preparation for service overseas. (Memo to CG 3d AF by Brig. Gen. Hume Peabody, Dir. of War Organization and Movement, 4 July 1942.) On 15 April 1942 the composition of the Ninth Air Force was reported as consisting of two bombardment groups (one medium and one light) and two fighter groups (single engine). See Comment #2, 22 April 1943, R&R, Stat. Control to AC/AS, Plans, in AFAMP, WP-III-B-1.

Chapter III

1. This Advance Echelon was to make plans and arrange for the control, operation, basing, and supply of the Ninth Air Force. Ltr., Maj. Gen. James A. Ulio to CG USAFIME, 27 June 1942, in AFIHI, 9th AF file. At that time the tentative plan of organization for the Ninth Air Force included:

Air Force Headquarters (Special)
One heavy bombardment group
  Air echelon moving
  Ground echelon sailing about 15 July 1942
Two medium bombardment groups
  One group (air echelon moving / ground echelon sailing about 15 July
  One group scheduled to move during October 1942
Fighter Command (Special)
Six fighter groups
  One group (air echelon moving / ground echelon sailing about 15 July
  One group scheduled to be moved during October 1942
  Two groups scheduled to be moved during December 1942
  Two groups scheduled to be moved during March 1942
Air Service Command Headquarters (Special)
Two air depot groups
  One group to be moved during September 1942
  One group to be moved during March 1942
Five air service groups
  One group to sail about 15 July 1942
  One group to be moved during October 1942
  Two groups to be moved during December 1942
  One group to be moved during March 1942

2. CM-OUT-6204 (6-25-42), OPD to AMSME, Cairo #1136, 24 June 42.

3. CM-IN-9515 (6-29-42), Cairo to AG, AMSME #34, 29 June 42.

4. CM-IN-9942 (6-30-42), Cairo to AG (Brereton to Marshall and Arnold), 29 June 42.

5. See the reference to a directive of 2 June 1942 (CM-OUT, AMSME #4), attached to CM-IN (7-10-42), Brereton for Arnold, thru Maxwell to AGWAR, AMSME #176, 11 July 42, in Cable Log Book, under that date, AFIHI files.

6. CM-IN-0044 (7-1-42), Cairo to AG (Brereton to Marshall), AMSME #46, 30 June 42.

7. The Air Service Command, U. S. Army Middle East Air Force, was activated on 28 June 1942, by General Orders No. 2, Headquarters,

U. S. Army Middle East Air Force, Cairo, Egypt. In addition to his regular duties, General Adler served as General Maxwell's Staff Air Officer, a position which he filled very ably. Of the services which he rendered, General Maxwell was most appreciative. Ltr., Maxwell to CG USAMEAF, 6 Oct. 1942, in 9th AF file.

8. See CM-IN (7-4-42), Brereton to Marshall and Arnold, thru Maxwell to WD, AMSME #62, Cairo, 3 July 42, in Cable Log Book.

9. By the middle of July, General Brereton reported that all available officers of the Air Section of the former Maxwell Mission had been absorbed into General Adler's Air Service Command. See msg. (7-17-42), Brereton to Arnold, AMSME #281, Cairo, 16 July 42.

10. See interview with Gen. Elmer E. Adler, 18 Jan. 1943, in U. S. 9000. It had been suggested in June that personnel be furnished to implement the Advance Echelon of the Middle East Air Force. Among the officers requested for this assignment were Cols. Patrick W. Timberlake, Auby C. Strickland, J. G. Moore, Truman H. Landon, and Wycliffe Steele, and Maj. G. H. Bonnell. According to the plan at the time, Colonel Moore would be placed on temporary duty with the Ninth Air Force, but remained in Washington to implement the rest of the staff, and to act as liaison officer with the USAMEAF until the complete staff and headquarters squadron had been arranged for. (Memo, AFDOP by AFCAS, 24 June 1942, in Air AG 320.2, 9th AF). By the middle of July, General Brereton was in urgent need of officer assistants for his operational staff. He therefore requested that two Air Corps officers as assistants in the G-3 section, two officers as assistants in the G-2 section, and one officer for public relations be sent to Egypt as soon as possible. These men were to have had experience in the staff work of the organization concerned. Eventually they would be assigned to the Ninth Air Force Headquarters, upon its arrival in the theater. CM-IN-5915 (7-17-42), Brereton to Arnold, thru Maxwell, AMSME #281, Cairo, 16 July 42.

11. The 7th Bombardment Group had been General Brereton's basic combat unit in India.

12. Administrative History, Ninth Air Force. The Rear Echelon and Command Post of the 9th Bombardment Squadron arrived at Lydda from Allahabad, India, on 3 July 1942. For a personal account of the flight from India, by an officer who joined the group at Lydda a few days later, see Born in Battle, by Capt. Rowen Thomas, 151 ff.

13. Maj. Frank O. Haile, Desert ~~Campaign~~, 2.

14. For the original traveling orders of the Halverson Detachment from the United States to the designated theater of operations, see memo for TAG by Col. O. S. Ferson, 17 April 1942, in AAG 373 G. For later instructions, see memo for Dir. of War Organization and Movement by Brig. Gen. L. S. Kuter, 15 May 1942.

15. CM-OUT-2175 (6-10-42), AMSEG #990, 10 June 42. For an early report on the Ploesti mission, see CM-IN-4509 (6-14-42), Halverson to CG AAF, 13 June 42; CM-IN-5246 (6-17-42), Maxwell to Marshall, thru Cairo to AGWAR, AMSEG #1472, Cairo, 16 June 42. See also AAFRH-3.

16. CM-IN-5593 (6-18-42), Halverson to CG AAF, Accra (from Fayid), 15 June 42.

17. CM-IN-5576 (6-17-42), Halverson to CG AAF, AMSEG #1481, 17 June 42; CM-IN-7576 (6-23-42), Crom to Arnold, thru Hodges to AGWAR, Cairo #1550, 23 June 42.

18. CM-IN-6008 (6-19-42), Fellers to WD, Cairo #1154, 17 June 42. Memo for the President by AFAEP (Anderson), 15 May 1942, in AFAEP, WP-IV-C-1, China Bk. 1 (Sep. 1941-Dec. 1942). CM-OUT-4477 (6-18-42), Marshall to Maxwell, 18 June 42.

19. CM-OUT-3990 (6-17-42), AFCAS to Halverson, Cairo #1053, 17 June 42; also CM-OUT-3989 (6-17-42), AFCAS to Maxwell, thru AFMAG to AMSEG, Cairo #1054, 17 June 42. In a previous message, General Maxwell had said that the experience of the Halpro Mission in the Middle East had demonstrated the unsoundness of sending small combat groups to that theater without giving orders to the unit commanders to report either to British authorities or to him. CM-IN-5246 (6-17-42), Maxwell to Marshall, AMSEG #1472, Cairo, 16 June 42.

20. CM-IN-7465 (6-23-42), Maxwell to Arnold, AMSME #8, Cairo, 22 June 42; CM-OUT-3989 (6-17-42), AFCAS to Maxwell, thru AFMAG to AMSEG, Cairo #1054, 17 June 42. See also IX Bomber Command file.

21. RAF Middle East Review No. 1 (May-Dec. 1942).

22. CM-IN-7461 (6-23-42), Halverson to Arnold, Cairo, 23 June 42; CM-IN-8413 (6-26-42), Cairo to AGWAR, AMSME #18, 25 June 42.

23. CM-IN-8653 (6-26-42), Cairo to AGWAR, AMSME #22, 26 June 42; CM-IN-9236 (6-28-42), Cairo to AGWAR, AMSME #28, 27 June 42.

24. Russell Hill, Desert Conquest, 79 ff.

25. CM-OUT-4477 (6-18-42), Marshall to Maxwell, WD #1079, 18 June 42.

26. The Detachment arrived there on 30 June 1942. See Administrative History, Ninth Air Force.

27. CM-IN-0305 (7-1-42), Maxwell to AGWAR, AMSME #55, 1 July 42.

28. CM-IN-1253 (7-4-42), Brereton, thru Maxwell, to Marshall and Arnold, AMSME #62, Cairo, 3 July 42. At the time, the strength of the enemy air force was estimated as follows:

In Africa - 180 fighters and 120 bombers (including ME-109, ME-110, Ju-87, and Ju-88 planes)
In Greece - 15 Ju-88's and 25 HE-88's, plus 50 assorted seaplanes and flying boats
In Crete - 70 Ju-88's, 10 ME-109's
In Sicily - 130 Ju-88's and 30 ME-109's

The British aircraft available numbered: 72 medium, 42 torpedo, and 172 light bombers; 297 fighters, 8 twin-engine fighters, and 30 night-fighters (SE); 88 reconnaissance; and 45 miscellaneous planes.

General Brereton's aircraft included: 14 B-24's and 4 B-17's with several bombers of each type en route from India. For the exact number of planes sent from India to the Middle East by 4 July 1942, see messages from Karachi, Aquila #2549 (1 July) and #2711 (4 July).

29. CM-OUT-0162 (7-1-42), Marshall to Maxwell, for Brereton and Fitz-Gerald, Cairo #1234, 1 July 42; CM-IN-1253 (7-4-42), Brereton to Marshall and Arnold, AMSME #62, Cairo, 3 July 42.

30. CM-IN-9160 (6-28-42), Carey to Arnold, thru Palmer to WD, Nairobi #72, 27 June 42; CM-IN-1238 (6-5-42), Maxwell to AGWAR, AMSEG #1321, Cairo, 4 June 42.

31. CM-IN-6184 (7-18-42), Maxwell to AGWAR, for Adler, AMSME #294, Cairo, 17 July 42. Other deficiencies here were shortage of organizational equipment and shortage of motor transportation.

32. CM-IN-8650 (6-26-42), Cairo to AG (Maxwell to Marshall), AMSME #17, 25 June 42; CM-OUT-0162 (7-1-42), Marshall to Maxwell, for Brereton and FitzGerald, Cairo #1234, 1 July 42; CM-IN-1253 (7-4-42), Brereton to Marshall and Arnold, AMSME #62, 3 July 42.

33. Memo for Gen. Arnold by Col. C. A. Anderson, "Air Movement from Cairo," dated 29 June 1942, in AFAEP, WP-III-F-4, Egypt.

34. GO No. 3, Hq. USAMEAF, Cairo, 17 July 1942.

35. Administrative History, Ninth Air Force.

36. Memo to CG USAAFIME, by Gen. Adler, 5 July 1942, in 9th AF file.

37. IX Bomber Command file; Morgan, History of the IX Bomber Command, 3.

38. Haile, Desert Campaign, 2; History, 57th Fighter Group (1 July 1942-23 Jan. 1943).

39. U. S. Navy, Reel A-431 (51950), Ranger. Administrative History, Ninth Air Force. The two accounts of the trip differ slightly as to the immediate destination of the planes, and the time of the arrival of the carrier off the African coast. The naval record states that the planes were launched on July 17, when the ship was off Accra. The Administrative History gives the date as July 19, and says that the planes landed at Lagos. On its former errand of a similar kind in April, the Ranger made the crossing in 19 days (21 April-10 May), and the planes were flown from the carrier to Accra.

According to the report of a naval pilot, the P-40's took off from the ship in an amazing fashion. They would rush down the deck and then disappear, as they went over the end of the carrier. To the great relief of the spectators, they would come safely into view again, far ahead of the ship. Although they dropped so close to the water that their propwash made a wake like that of a speedboat, every plane was able to rise. Howard Mingos, American Heroes of the War in the Air (New York, 1943), I, 368. The 57th Group doubtless profited from the experience of the pilots who had delivered the P-40's in April. See "Report on the P-40 Mission, Special Project 157," by Lt. Col. John E. Barr, 19 June 1942, in History of Headquarters, Tenth Air Force, 1942. See also ltr., Gen. Arnold to Adm. King, with incl., 19 June 1942, in AAG 000-800, Africa.

40. History, 57th Fighter Group.

41. Mingos, American Heroes of the War in the Air, I, 368.

42. Administrative History, Ninth Air Force.

43. History, 57th Fighter Group; interview with Col. Frank Mears, 10 Aug. 1943, in U. S. 9000.

44. Ibid.; Administrative History, Ninth Air Force. According to some accounts the squadrons were scattered for training just before the arrival of the ground crews.

45. Secret radiogram, Arnold to Brereton, 25 June 42.

46. For a study of the day-by-day missions of the heavy bombers up to this time, see Analysis of Missions by A-2, in AFIHI files.

47. CM-IN-0246 (7-1-42), Crom to Arnold and AFRDB, thru Cairo to AG, AMSEC #1629, 1 July 42.

48. Memo for CG ASC, by Brig. Gen. Muir S. Fairchild, 11 June 1942, with 1st ind., in WP-III-Near East Overall. By early July, it had been decided that the vicinity of Accra would be a good

location for the 8th Mobile Depot Group--a plan which was later approved. Memo to CG AAF by Col. Clements McMullen, Chief, Overseas Div., ASC, 2 July 1942, in AAG 450, Africa. See also the note at the bottom of the above memo.

49. AWPD, Division Digest, 29 June 1942, in Air AG files.

50. Administrative History, Ninth Air Force.

51. Memo for CG ASC by Brig. Gen. Muir S. Fairchild, 11 June 1942, in WP-III-Near East Overall.

52. Administrative History, Ninth Air Force. According to Capt. Rowan Thomas, the 98th Group had 40 B-24's. Born in Battle, 171.

53. Morgan, History of IX Bomber Command, 3.

54. See n. 164, Chap. II.

55. History, 12th Bombardment Gp.; Administrative History, Ninth Air Force.

56. History, 12th Bombardment Gp.; Interview with Col. Curtis R. Low, 23 July 1943, in U. S. 9000; RAF Middle East Review, No. 1, 28. When it was found that the B-25's were unsatisfactory for night missions because of the lack of flame dampeners, steps were taken immediately to correct this defect. By the middle of October, the first shipments of flame dampeners were on their way to Egypt. (See CM-OUT-6466 (9-19-42), AFASC to Brereton, 18 Sep. 42; and cables from same office to Brereton, CM-OUT-7183 (9-21-42), 21 Sep. 42, and CM-OUT-7714 (9-23-42), 23 Sep. 42.) In the meantime, it is possible that dampeners of local manufacture were used.

57. Administrative History, Ninth Air Force.

58. Until the arrival of the 306th and 315th Service Groups about 1 November, the 323d was the only service group in this area. (Ltr., Brereton to Arnold, 21 Nov. 1942, in 9th AF file.) Behind Palestine, in the direction of Basra, an advance depot had been planned for supply and maintenance soon after General Brereton's arrival. It was to be manned temporarily by American manufacturers' representatives and personnel from Basra (Cedar) and Gura. (CM-IN-1253 (7-4-42), Brereton to Marshall and Arnold, AMSME #62, 3 July 42). For the legal right, in terms of the Douglas contract, to detach Gura personnel for temporary service in other places, see CM-OUT-1083 (9-3-42), Marshall to Cairo, AMSME #661, 3 Sep. 42.

59. Ltr., Brereton to Arnold, 21 Nov. 1942, in 9th AF file. General Upston's comment on the geographical disadvantage of the location probably applies to a later period. Extracts from an interview with Brig. Gen. John E. Upston, 8 Dec. 1942, "Observations of Air Force Activities in the Middle East, October 1-18," in U. S. 9000.

60. Ltr., Brereton to Arnold, 21 Nov. 1942.

61. CM-IN-10306 (7-30-42), Brereton and Adler to Arnold, AMSME #442, Cairo, 29 July 42.

62. CM-OUT-6999 (7-24-42), A-4 to AMSEG, Cairo #1399, 24 July 42.

63. Ibid.; CM-IN-1123 (8-4-42), Cairo to AGWAR, AMSME #513, 3 Aug. 42.

64. CM-IN-6184 (7-18-42), Maxwell to AGWAR, AMSME #294, Cairo, 17 July 42. See also ltr., Brereton to Arnold, 21 Nov. 1942.

65. CM-IN-3759 (7-11-42), Maxwell to AGWAR, AMSME #173, Cairo, 10 July 42.

66. Note appended to CM-IN-3422 (7-10-42), Maxwell to AGWAR, AMSME #154, Cairo, 9 July 42.

67. CM-IN-5030 (7-15-42), Maxwell to AGWAR, AMSME #230, Cairo, 14 July 42; also CM-IN-6184 (7-18-42), Maxwell to AGWAR, AMSME #294, Cairo, 17 July 42.

68. CM-OUT-6257 (9-18-42), Arnold to Cairo, AMSME #878, 18 Sep. 42; see also R&R, AFACT to AFADS, 29 Sep. 1942, in AAG 686, Air Base, Africa.

69. CM-OUT-1781 (6-8-42), AFASC to Maxwell and Crom, thru AFMAG to AMSEG, Cairo WD #977, 8 June 42; CM-IN-10306 (7-30-42), Cairo to AG, AMSME #442, Cairo, 29 July 42. See also memo for Gen. Stratemeyer by Brig. Gen. T. J. Hanley, n.d., AFAEP, WP-V, Middle East; prepared cable, Air Staff, A-4, thru Marshall, to Brereton, 1 Oct. 42, in AFAEP, WP-V, Middle East.

70. In August Vice Marshal Graham Dawson had written to Mr. Averill Harriman regarding the importance of maintenance, repair, and salvage in the Middle East. He deplored the lack of a unified command for the American air effort there. In obtaining supplies, he considered the direct link of the Ferrying Command with the United States a great advantage, and thought that the bombardment groups might suffer thereby. He therefore proposed the establishment of regional service commands, in support of operations within their boundaries.

Projects like Gura and Abadan, and perhaps the air transport base at Accra, he envisaged as being directly under a general headquarters and controlled by an air officer experienced in maintenance and supply. At general headquarters, he hoped that

there would be a major general with whom he could work, so that the entire maintenance organization supporting the air forces of both countries might be developed as a common organization, with appropriate British and American sections, not overlapping, but with appropriate direction toward the common aim. Owing to the welcome arrival of AAF units, the maintenance and supply division of the RAF was then bearing an additional load. In view of the length of time needed to develop an American organization of a similar sort, he thought that close cooperation and coordination of effort were especially essential. For General Arnold's comments, see ltr., Arnold to Brereton, 23 Oct. 1942, and inclosures, in AAG 381.

71. CM-IN-1123 (8-4-42), Cairo to AGWAR, AMSME #513, 3 Aug. 42.

72. CM-IN-7056 (8-19-42), Cairo to AGWAR, AMSME #763, 18 Aug. 42; CM-IN-7646 (8-21-42), Cairo to AG, AMSME #789, Cairo, 19 Aug. 42; CM-OUT-6413 (8-20-42), OPD (Marshall) to AMSME #489, Cairo, 20 Aug. 42.

73. CM-IN-0356 (8-1-42), Cairo to AGWAR, AMSME #481, 1 Aug. 42.

74. On 18 August 1942, General Brereton cabled that, aside from Tenth Air Force personnel, the following officers were available for assignment to the headquarters and service command of the Ninth Air Force. For current duties, their assignments would, of course, be with the USAFIME. The list ran as follows:

Air Force Headquarters

Maj. L. L. Long	Asst. Adj. Gen.
Lt. Col. R. M. Baughey	Public Relations
Col. Sory Smith	G-1
Maj. G. G. Finch	Asst. G-3
1st Lt. A. Parlato	Asst. G-2
Col. W. E. Steele	G-4
Brig. Gen. A. C. Strickland	Fighter Command
Maj. F. G. Thomas	Asst. G-3
Maj. H. F. Turner	Antiaircraft Artillery Officer
Lt. Col. John E. Roberts	Surgeon
Col. P. W. Timberlake	G-3
Col. W. H. Grom	G-2
Lt. Col. A. W. Schofield	Special Projects Officer
Lt. Col. C. M. Seebach	Act. Adj. Gen. (Inf.)

Air Service Command

Capt. R. G. Snyder	Asst. Engineering Officer
2d Lt. D. E. Doddridge	Finance Officer
Maj. H. F. Damon	Engineering Officer
Capt. H. E. Baton	Asst. Supply, Purchasing and Contracting Officer

Lt. Col. H. W. Pennington	Materiel Officer
Maj. J. B. Rogers	Hq. Commandant
2d Lt. W. S. Moore	Q. M. Officer
Maj. L. B. Ocomb	Supply Officer
Lt. Col. G. H. Bonnell	Asst. Executive
1st Lt. S. M. Frank	Ordnance Officer
1st Lt. M. J. Goodman	Engineering Corps Officer

With the exception of General Strickland, and Colonels Timberlake, Crom, and Seebach, the rest of these personnel had had practically no prior staff duty, General Brereton adds. By this time, however, they were quite familiar with their duties. Under the guidance of General Adler and Colonel Strahm they were receiving full support from the Allied staffs with whom they dealt. It was General Brereton's hope that this staff might remain as listed. Msg., Brereton to Marshall, thru Maxwell to AG, AMSME #789, Cairo, 18 Aug. 42. See 9th AF file.

75. The number of men on detached service from the Tenth Air Force was given as 90 officers and 250 enlisted men. CM-IN-11508 (8-30-42), New Delhi to AGWAR, Aquila #4359, 29 Aug. 42--a corrected copy of CM-IN-11266 (8-30-42).

76. CM-IN-11424 (8-30-42), Stilwell to Marshall, AMMISCA #64, 28 Aug. 42.

77. The names of the 15 officers who made up this group, and the offices which they then held on General Brereton's USAAFIME staff, are given below:

Brig. Gen. Elmer E. Adler - Air Service Commander
Col. Victor H. Strahm - Chief of Staff
Maj. Lewis E. Hobbs - Aide-de-Camp
Lt. Col. Edward N. Backus - Commanding Officer, 12th Bombardment Group
Lt. Col. Cornelius V. Whitney - Asst. G-2
Maj. Richard K. Pierce - Surgeon, Air Service Command
1st Lt. Joseph T. Johnson - Adj. Hq. Flight
1st Lt. John E. Felton - Aide-de-Camp
Capt. David H. Likes - Communications Officer, Air Service Command
1st Lt. Lawrence F. Converse)
1st Lt. James L. Goodwin)
1st Lt. Robert E. Ahlin)
1st Lt. Harry W. Hopp) - Assigned to Hq. Squadron
1st Lt. Paul H. Roth)
1st Lt. Jens H. Hansen)

The six last-named officers were crew members of three transports retained in the Middle East for supply and ferry purposes. See CM-IN (9-19-42), Maxwell to AGWAR (Brereton to Arnold), AMSME #1398.

Cairo, 18 Sep. 42, and msg., Brereton to AFPMP, AMSME #1553, Cairo, 26 Sep. 42, in 9th AF misc. papers, 23 July 1942-26 Aug. 1943. For the authorization of their assignment to the Ninth Air Force, see memo for CG 9th AF by Maj. Gen. Thomas T. Handy, 10 Sep. 1942, attached to Orders of 24 Oct. 1942, in AAG 210.68.

For assignment of General Brereton to the Ninth Air Force, see CM-OUT-5599 (9-17-42), AFPMP to AMSME, Cairo #842, 16 Sep. 42; and comment #2, 22 April 1943, R&R, Stat. Control to AC/AS, Plans, in AFAEP, WP-III-B-1, AAF No. 5.

78. CM-OUT-5534 (9-16-42), OPD, thru Marshall, to Maxwell, AMSME #839, Cairo, 16 Sep. 42. See also msg., Marshall to Brereton, AMSME #1221, 11 Oct. 42, in 9th AF misc. papers, 23 July 1942-26 Aug. 1943.

79. CM-OUT-5534 (9-16-42), OPD, thru Marshall, to Maxwell, AMSME #839, Cairo, 16 Sep. 42. Of the 160 enlisted men who accompanied General Brereton to Egypt, 142 were returned. Owing to a shortage of personnel, it was agreed that the other 18 should be retained in the Middle East to maintain 10 B-17's until ground personnel should arrive from the United States to relieve them. By January they were still there, and inasmuch as no relief was in sight General Brereton suggested that the matter of their transfer be dropped. Msg., Brereton to Arnold, AMSME #4090, 20 Jan. 43, in 9th AF misc. papers, 23 July 1942-26 Aug. 1943.

80. Msg., Brereton, thru Maxwell, to Bissell, 12 Oct. 42; msg., Marshall to Brereton, AMSME #1221, 11 Oct. 42; and msg., Brereton to Bissell, AMSME #182-Q, 23 Oct. 42. Ibid.

81. In a conversation with the President at the end of July 1942, Col. Bonner Fellers, who had just returned from Egypt, made an eloquent appeal for immediate reinforcement of the Middle East. Mr. Roosevelt then conferred with General Arnold, on the evening of 30 July. As a result, a study of the feasibility of augmenting AAF participation in operations there was initiated. See memo for AC/S, Operations Div., on Augmentation of Air Forces in the Middle East, 1 Aug. 1942, in AFAEP, WP-III-C-4, Western Russia. At the time, the following U. S. units and planes were in the Middle East:

Heavy Bombardment:

Commitments through OPD: One group of 35 planes, with a reserve of 17 (total, 52)

Present situation: One group (98th) was in the theater or en route, with 9 planes on hand, 26 en route, and 8 being prepared. (total, 43). This was 9 short of the 52 required.

The 9th Squadron from India was, however, in the Middle East, with 27 planes on hand, and 3 en route (total, 30). Attrition for the 98th Group was figured at 10 planes per month, or 28 per cent.

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Medium bombardment:

Commitments through OPD: Two groups of 57 planes each, with a reserve of 28 planes each. (Total, 170 planes for the two groups.)

Present situation: One group (12th) in the theater or en route, with 5 planes on hand, 34 en route, and 34 being prepared (total, 73). This was 12 planes short of the required 85. Attrition for the 12th Group was figured at 13 planes a month, or 22 per cent.

Additional groups: A second group was scheduled for December 1942.

Fighter:

Commitments through OPD: Six groups of 80 planes each, with a reserve of 40 planes each (50 per cent). (Total of 720 planes for the six groups.)

Present situation: One group (57th) was then in the theater or en route with 50 planes on hand, 19 en route, and 76 being prepared to go in August (total, 145). This was 25 planes over the 120 required for each group. Attrition for the 57th Group was figured at 16 planes a month, or 20 per cent.

Additional groups: At the time, the schedule of shipments allocated one additional group in October, two in December, and two in March. If a revision of schedule were possible, it was hoped that these additional groups could be placed in the theater at an earlier date.

82. This group had originally been intended for Task Force BRITAIN. See memo for C/AC by Lt. Col. John B. Cooley, on Task Forces for Britain and Cairo, 17 Jan. 1942, in AFAEP, WP-III-A-2, Great Britain No. 1 (2 Feb. 1941-30 April 1942).

83. Memo for Gen. Arnold by CCS, 5 Sep. 1942, in Air AG 152.1, BOLERO; JCS 101, on Immediate Allocation of the 33d Pursuit Group, 8 Sep. 1942, in AFAEP, J/CCS Div., 370.5, 33d Pursuit Group (9-9-42).

84. Ltr., Lt. Gen. Arnold to Air Marshal D.C.S. Evill, 9 Sep. 1942, ibid.

85. Ltr., Air Marshal Evill, through Air Comdr. S. C. Strafford, to Lt. Gen. Arnold, 10 Sep. 1942, ibid.

86. CM-IN-8195 (9-19-42), Eisenhower to Marshall, London, #2396, 19 Sep. 42; memo for Reps. of British Chiefs of Staff, 21 Sep. 1942, ibid.

87. CCS 112 and 112/1, 22 Sep. 1942, on Immediate Allocation of the 33d Pursuit Group, ibid. For a fuller discussion of the whole problem see AAFRH-5.

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~~SECRET~~ SECURITY INFORMATION

88. CM-OUT-7145 (9-21-42), Marshall to AMSME, Cairo, #914, 21 Sep. 42; CM-OUT-8214 (9-24-42), Lt. Col. William F. McKee to AMSME, Cairo #957, 23 Sep. 42; and History, 79th Fighter Gp., 1943.

89. CM-OUT-8214 (9-24-42), Lt. Col. William F. McKee to AMSME, Cairo #957, 23 Sep. 42; CM-IN-8214 (9-24-42), Brereton to Arnold, AMSME #1702, Cairo, 5 Oct. 42.

90. Ltr., Air Marshal John C. Dill to Gen. Marshall, 27 Sep. 1942, in AFAEP, WP-V, Middle East.

91. Ibid.

92. CM-OUT-2368 (7-9-42), Marshall to AMSME, WD #32, A-3, 8 July 1942, Ibid.

93. Memo for Record (concerning WD #32, 8 July 1942), ibid.; memo for Gen. Stratemeyer by Brig. Gen. T. J. Hanley, Jr., n.d., ibid.

94. R&R, AFACT (thru Col. Robert W. Harper) to AFOAS, 26 Sep. 1942, on Pooling of P-40 Airplanes in the Middle East, ibid.

95. Memo for Gen. Stratemeyer by Brig. Gen. T. J. Hanley, Jr., n.d., ibid.

96. Msg., AAF, A-4 Div. (thru Marshall) to AMSME (for Brereton), 1 Oct. 1942, ibid.

97. Ltr., C/S to Sir John Dill, rewritten 6 Oct. 1942, ibid.

98. Morgan, History of the IX Bomber Command, 3.

99. Through British Reconnaissance and Intelligence, the Allies were kept aware of these movements, and no convoy could hope to remain undiscovered for long. Upon detection, experts would calculate the rate of travel and plot the probable course. This information was then flashed to the American bomber groups, and within a few hours their planes would be on the way. For details of the operations of the 98th Bombardment and First Provisional Groups working in conjunction with the RAF units holding Malta, see ibid.; interview with G/C J. W. Merer of the RAF, 5 May 1942, in U. S. 9000; and Thomas, Born in Battle, 222 ff; interview with Lt. Col. Horace M. Wade, 23 June 1943, in U. S. 9000. For memorandum of Mr. Harriman's talk with General Brereton, August 1942, see R&R, Arnold to Stratemeyer, 13 Sep. 1942, with incls., in Air AG 370.2.

100. Between 6 September and 22 October, the heavy bombers flew 120 sorties. Of these, about 80 were made against Benghazi, to which much of the Axis shipping had been diverted as a result of raids upon Tobruk. The most important attack was made by RAF and USAAF

Liberators, on the night of 22-23 September. Owing to the blowing up of a large merchant vessel lying alongside one of the main piers, the unloading capacity of the port was seriously impaired for several weeks. (RAF Middle East Review, No. 1, 37.) Four sharp raids were directed against Maleme between 21 October and 1 November (21/22, 29, 30/31 Oct. and 1 Nov.) 1942. Summary of cables, Brereton to Arnold, Cairo, #526-#530, 4 Aug. 42. Inclosure attached to note, AFDAS to AFAEP, 11 Aug. 1942, in WP-III, Near East Overall.

101. History, Weather Sec., IX Bomber Command. See A-2 collection in 9th AF file.

102. The question under discussion was whether Tobruk should be attacked, or whether the heavy-bomber effort should be conserved for more important targets expected in the near future. For the details of the controversy, see memo for CG USAMEAF by Col. P. W. Timberlake, 7 Sep. 1942, 9th AF misc. papers, 18 July 1942-17 Aug. 1943.

103. The command was established by the authority contained in radiogram #AF 773, dated 12 Oct. 1942. Administrative History, Ninth Air Force.

104. Memo for AOA-in-C, RAF Hq., Middle East by Gen. Adler, 28 Oct. 1942, in 9th AF file; CM-IN-2757 (11-7-42), Brereton to Arnold, thru Cairo to AG, AMSME #2369, 6 Nov. 42. Formal operational control was delegated to the IX Bomber Command on 2 Nov. 1942. Hq. USAMEAF, GO No. 7, 2 Nov. 1942.

105. According to Orders of 25 June 1942, Colonel Timberlake was to be "Commanding Officer of the Advanced Echelon of the USAMEAF, with Headquarters in Cairo." See AAG 201 files. He became a brigadier general on 1 November 1942.

106. Morgan, History of the IX Bomber Command; interview with Lt. Col. Horace M. Wade.

107. Colonel Keiser was an extremely valuable member of General Timberlake's staff. His death at Ismailia a few months later was a great loss. See CM-IN-5651 (12-13-42), Brereton to Arnold, thru Andrews to AGWAR, AMSME #3165, Cairo, 12 Dec. 42.

108. Morgan, History of the IX Bomber Command.

109. Ibid.

110. On flights in which the American pilots were included, these veteran squadrons used a V-formation of three echelons--the lower echelon, the support, and the reserve or topcover, a position assigned to the USAAF fighters, whose duty it was to

protect the lower echelon from enemy fighters. This arrangement enabled them to move freely and to ward off marauders fairly easily. As the group gained experience, its airmen were moved down through the echelons to more difficult assignments, until, with the acquisition of self-confidence, they became capable of operating by themselves. Col. Arthur G. Salisbury, Record of Combat Activities of the 57th Fighter Group (1 July 1942-23 Jan. 1943), in 9th AF file; interview with Col. Frank Mears.

111. If the Allied air attacks upon Axis lines of communications had not proved so effective, the offensive would have been begun a week earlier. According to the original plan it was to have been opened on 25 August, in order to take advantage of the period of full moon. RAF Middle East Review, No. 1, 25.

112. Maj. Peter R. Chandler, History of the 66th Fighter Group. This MS. was loaned to the Historical Division through the courtesy of Major Chandler. See also Capt. Hubert L. Allensworth, History of the 57th Fighter Group. In the course of this battle, the P-40's carried out 145 sorties on bomber-escort duty and acquitted themselves well, for, even during the most intensive operations, not a single escorted bomber was lost. RAF Middle East Review, No. 1, 96.

113. It had been agreed that the British would furnish antiaircraft protection and a telephone exchange for the group at this field. (History, 57th Fighter Group). The field itself was 1,500 yards square, and therefore large enough for 12 planes to take off together. Although landings were always made into the wind, it was possible for the entire group of 36 planes to be got into the air within a few minutes by dispatching 12 at a time, in 3 different directions, regardless of the wind. Interview with Col. Frank Mears.

114. Chandler, History of the 66th Fighter Group.

115. Interview with Col. Frank Mears.

116. Memo for AFACT by AFADS, 5 Oct. 1942, attached to memo for AFADS by AFAEP, 13 Oct. 1942, in WP-III-Near East Overall; memo to CG 9th AF by Brig. Gen. T. J. Hanley, Jr., 10 Oct. 1942, in Air AG 320.2, 9th AF. Meanwhile rumors regarding the failure of AAF and RAF agencies to work in complete harmony had reached General Arnold. Fortunately these reports were without foundation , and probably originated among fifth columnists. CM-OUT-09256 (10-28-42), AFADS to CG USAFIME, #1526, 27 Oct. 42; CM-IN-13127 (10-31-42), Cairo to AG AMSME 2235, 30 Oct. 42.

117. The 66th Squadron did not rejoin the other two squadrons of the 57th Group until Belandah Landing Ground was reached some weeks later. History, 57th Fighter Group.

118. RAF Middle East Review, No. 1, 37.

119. Ibid.; Administrative History, Ninth Air Force; General Brereton, "Direct Air-Support in the Libyan Desert (Oct. 19-Nov. 8, 1942)," 27-28; memorandum of Mr. Harriman's talk with Gen. Arnold, attached to R&R, Gen. Arnold to Gen. Stratemeyer, 13 Sep. 1942, in Air AG 370.2.

120. These operations constituted the first real test of the effectiveness of the fighter-bomber, which was relatively new at the time. Having developed the German experiment systematically, the British found their improvement most satisfactory, for as soon as the plane had dropped its bombs, it could resume its fighter role and either strafe ground troops or attack any Stukas which might be in the vicinity. Hill, Desert Conquest, 117.

121. In readiness for the Eighth Army's fall offensive, a number of P-40's had been equipped with bomb racks. In a short time, these American fighter-bombers were making dozens of sorties daily, either in company with Allied squadrons, or in American formations, for the tempo of the attack had increased as the day of the Army's offensive approached. (RAF Middle East Review, No. 1, 29, 96.) During the first period of the offensive itself, the 57th Group is credited with one-tenth of the total number of sorties flown by the Desert Air Force. Salisbury, Record of Combat Activities of the 57th Fighter Group (1 July 1942-23 Jan. 1943).

122. Missions were flown so continuously that as soon as planes could be serviced after one trip, they took off on another. In the course of these weeks, the group flew one-sixth of all the sorties flown by the Desert Air Force and, during this and the preceding period, scored approximately 40 per cent of its aerial victories. (Ibid.) According to RAF reports, the individual record of the group for the last 3 weeks of October is impressive, for the P-40's carried out 500 sorties on bomber escort duty, 260 on bombing and strafing, 170 on offensive sweeps, and 30 on defensive patrol. RAF Middle East Review, No. 1, 96.

123. The first of these missions was the raid on Fuka in the early morning of 27 October (Allensworth, History of the 57th Fighter Group). The effectiveness of this and other similar early-morning raids by the group was reflected in the size of the enemy's retaliatory missions. At the beginning of the period, 2 substantial formations, comprising from 15 to 30 German planes, could be expected in the course of the day. These gradually dwindled to half that number, with one mission in the forenoon and one in the afternoon. Then the visits were made at longer

intervals, and finally almost ceased. Never again in the Battle of Egypt or in the ensuing Libyan campaign was the Axis air force a serious contender for control of the air. The explanation for the decreasing fighter strength appeared later when the 57th Group passed the airdromes which the enemy had been using and found there were many of his planes grounded because of unserviceability. Interview with Col. Frank Mears.

124. In order to destroy this movement, the Desert Air Force quickly organized a shuttle service for fighter-bomber attacks, with the result that by dusk transport vehicles were seen burning along the entire stretch of road from Ghazal to Fuka. Thrown into confusion by the havoc inflicted upon his army, Marshal Rommel found it impossible to hold his lines extending southward from Ghazal. Salisbury, Record of Combat Activities of the 57th Fighter Group.

125. Ibid.

126. Ibid.; Administrative History, Ninth Air Force. The placing of the American fighters in the vanguard of the pursuing Allied air force was recognition of the good work which the 57th Group had done. In the following weeks it was to give an equally good account of itself, as it moved across the desert. In close cooperation with the Eighth Army, fighters of the group went forward to occupy new landing grounds almost as soon as the retreating forces had abandoned them. The rapidity of its advance was greatly facilitated by the division of the ground echelon into two groups, labeled "A" and "B." As the Army progressed, "A" party would proceed to the new landing ground and when ready for operations would signal to "B" party. The aircraft would then go forward to the new field, and "B" party either would join "A" party or would leapfrog over it to a landing ground nearer the front. In this way the tempo of the advance was maintained, and the planes were kept in continuous operation. Salisbury, Record of Combat Activities of the 57th Fighter Group.

127. Ibid.; Interview with Lt. Col. Geoffrey H. Bonnell, 7 May 1943, in U. S. 9000.

128. CM-IN-1518 (9-4-42), Cairo to AG, AMSME #1096, 3 Sep. 42; also interview with Col. Curtis R. Low. Association with the Bostons and Baltimores of the RAF and SAAF led the 12th Bombardment Group to adopt their method of pattern-bombing, which had been developed by Air Marshal Coningham. Finding that each 250-lb. British bomb had a destructive radius of about 50 yards, he had arranged the formation in such a way that, by the spreading out of the airplanes, the bombs would fall about 100 yards apart. The signal for bombing was given by the opening of the lead bombardier's doors--and was

followed most promptly, in order to insure the success of the mission. While pattern bombing was sometimes used to destroy enemy strongholds, or to neutralize areas that Marshal Rommel might employ to advantage, its chief virtue lay in the swiftness with which it broke up enemy concentrations, and so prevented counterattacks. (Ibid.; Hill, Desert Conquest, 172 ff.) For a discussion of the style developed by the 12th Bombardment Group, see interview with Capt. R. M. Lower, 17 Sep. 1943; History, 12th Bombardment Gp.; interview with Col. Curtis Low.

129. It was on a raid to Sidi Haneish, on 13-14 September, that Col. Charles Goodrich, the commanding officer of the 12th Group, fell into the hands of the enemy and was made a prisoner of war, after his plane had been shot down behind the Axis lines. Lt. Col. Curtis R. Low took charge of the group for a few days until Lt. Col. Edward N. Backus assumed command on 16 September 1942.

130. Administrative History, Ninth Air Force; History, 12th Bombardment Gp. By 18 October, "A" and "B" parties and the air echelon had reached Landing Ground 88. The personnel consisted of men drawn from Headquarters, and the 82d, 83d, and 434th Squadrons.

131. RAF Middle East Review, No. 1, 37.

132. History, 12th Bombardment Gp.; interview with Col. Curtis R. Low.

133. Ibid. The number of fighters furnishing the escort varied from 6 to 24, depending upon the size of the bomber formation. Interview with Capt. R. M. Lower.

134. Chandler, History of the 66th Fighter Squadron.

135. Interviews with Col. Curtis R. Low and Capt. R. M. Lower.

136. Ibid.

137. Before and during the El Alamein offensive, the B-25's shouldered approximately one-fifth of the load given to medium and light bombardment. Desert Campaign, 3.

138. History, 12th Bombardment Gp.

139. Ltr., William C. Carr to Frank H. Lyons, 20 Nov. 1942, in Counter-Intelligence Communications, 1000-1499, #1392. Mr. Carr, who was the field service representative of North American Aviation, Inc., in North Africa, states that with bombs carried on the wings, the B-25 was capable of doing the work of four Bostons. The first B-25C to be equipped with such bomb racks in this theater was flown by the commanding officer and a senior pilot

on 9 November 1942. This was not the only modification which the B-25 was to undergo, because in the same letter Mr. Carr mentions the fact that the lower turrets were to be removed from all planes of this kind in the North African area. He also speaks of the request of upper turret gunners for more protection. Ibid.

140. Desert Campaign, 3.

141. Memo for Chief, Strategy and Policy Gp. by Cols. F. N. Roberts and Joseph Smith, 3 Sep. 1942, on Proposed Anglo-American Air Force for Operation in the Caucasian Area, in AFAEP, WP-III-C-4, Western Russia. Ltr., Sir John Dill to Gen. Marshall, 27 Sep. 1942, attached to R&R from Brig. Gen. O. A. Anderson, 4 Oct. 1942, in WPD-III-Near East Overall. Ltr., Air Marshall D. C. S. Evill to Lt. Gen. H. H. Arnold, 12 Oct. 1942, in AFAEP, WP-III-A-2, Great Britain, No. 2, Insert 1A.

142. Memo for CG AAF by Brig. Gen. O. A. Anderson, 7 Oct. 1942, on Air Units for Transcaucasia, WPD-III-C-4, Western Russia. Several months earlier a study on bases and targets within range of the Caucasus and southern Russia had been received from AFABI. It was given careful consideration with a view to ascertaining whether bombing operations from this sector would be feasible and profitable. (AAF, Plans Div. Division Digest, 2 June 1942.) About the same time a study on transportation in this area was made by A-2. (Ibid., 16 June 1942.) The British contingent was to include 9 fighter squadrons, 3 light bomber, and 2 medium squadrons. Ltr., Air Marshal Evill to Lt. Gen. Arnold, 12 Oct. 1942, in WPD-III-A-2, Great Britain, No. 2. For basic logistical services or support, the United States was to have no responsibility. Ltr., Gen. Arnold to Air Marshal Evill, 2 Nov. 1942, Ibid.

143. Msg., Marshall to Brereton, AMSME #1221, 11 Oct. 1942, in 9th AF file. See also ltr., Gen. Arnold to Air Marshal Evill, 12 Oct. 1942, and memo for Gen. Arnold from Gen. Anderson, 2 Nov. 1942, Ibid.

144. Ltr., Gen. Arnold to Air Marshal Evill, 12 Oct. 1942, ibid. In September, General Brereton had sought to establish the First Provisional Group on a more permanent basis. With this end in view, he recommended that the unit be given a tactical designation and number and a formal table of organization. Ltr., Gen. Brereton to Gen. Stratemeyer, 7 Sep. 1942, in AAG 201, Lewis H. Brereton.

145. Activated as of 2400 L.T., 31 October 1942. (Msg., Brereton to AFAAP, thru Maxwell to AG, AMSME #2266, 1 Nov. 42.) The date is often given as 1 November, however. Msg., Brereton to Arnold, AMSME #4090, 20 Jan. 43.

146. CM-IN-4090 (11-10-42), Brereton to AFPMP, thru Cairo to AG, AMSME #2434, 9 Nov. 42. For the enthusiasm with which the 513th Bombardment Squadron received the news of the activation of the 376th Bombardment Group, see Captain Thomas' account (p. 255) in Born in Battle. Up to this time, the squadron had been a part of the 9th Bombardment Squadron, on loan from Tenth Air Force. In recognition of its new status, the unit immediately sought to acquire insignia. The design was inspired by the circumstances of the moment, and the past experience of some of its members who had served in the Philippine and Java campaigns. A circle drawn on a heraldic background indicated that the squadron was bombing its way around the world. Three bombs, with yellow nose to the center, and streaks of lightning, signified its bombardment of all of the Axis partners--Japanese, Germans, and Italians. Over this, ran the emblazoned legend "Born in Battle," a phrase which gave the title to Captain Thomas' book.

147. Morgan, History of the IX Bomber Command. For Colonel Halverson's return to the United States, see msg., Brereton to AG, AMSME #514, 3 Aug. 42. Under the most trying conditions, Halverson had done an excellent piece of work, said General Brereton.

148. Msg., Marshall to Brereton, AMSME #1221, 11 Oct. 42. The 513th Bombardment Squadron had been equipped with B-17's.

149. Memo for Joint U. S. Staff Planners by Sec. of JCS, 13 Oct. 1942, in J/CCS Div., 370.5, Caucasus (10-5-42). Air Marshal Drummond was designated as head of this Anglo-American Mission to Russia. (See memo for CCS by Reps. of British Chiefs of Staff, on Dispatch of U. S. British Air Contingent to the Caucasus, C.C.S. 122, 14 Nov. 1942, Ibid.) The representative for the War Department was Brig. Gen. Elmer E. Adler. It was suggested that a representative from the Bomber Command, USAFIME, and one from the Persian Gulf Service Command be included. (Msg., OPD to CG USAFIME, 24 Oct. 1942, Ibid. See also CM-OUT-06148 (10-19-42), OPD to CG USAFIME, #1376, 18 Oct. 42.) About this time it was decided that upon completion of his mission to the Soviet Union and suitable indoctrination of his replacement, Col. Robert Kauch, General Adler should return to the United States. CM-OUT-2972 (11-9-42), Ulio to CG USAFIME, #1722, 9 Nov. 42.

150. Morgan, History of IX Bomber Command; Administrative History, Ninth Air Force.

151. Ibid.; also ltr., Gen. Brereton to Gen. Arnold, 21 Nov. 1942, in 9th AF file.

152. The 975th Military Police Company (Avn) reached the Middle East on 31 October 1942. Two officers and 51 enlisted men, less detachments, were attached to the 98th Bombardment Group at Fayid,

Egypt, by 10 November, and on the same date 2 officers, and 49 enlisted men were assigned to the 376th Bombardment Group at Abu Sueir. Administrative History, Ninth Air Force.

153. Ibid.; also CM-OUT-9005 (9-27-42), AFASC, thru Stratemeyer, to AMSME, Cairo, #996, 26 Sep. 42.

154. Ltr., Brereton to Arnold, 21 Nov. 1942, 9th AF file.

155. History of the Weather Section, IX Bomber Command.

156. Administrative History, Ninth Air Force.

157. CM-IN-1902 (11-5-42), Cairo to AG, AMSME #2308, 4 Nov. 42.

158. GO No. 23, Hq. USAFIME, dated Cairo, 12 Nov. 1942, pursuant to instructions contained in letter AG 320.2 (6-26-42) MS-AFACT, dated 27 June 1942, "9th Air Force," and WD radiogram AMSME #1735, dated 10 Nov. 42 [i.e., CM-OUT-3188 (11-10-42), Arnold to CG USAFIME, 10 Nov. 42]. See also GO No. 1, Hq. Ninth U. S. Air Force, Cairo, dated 12 Nov. 1942, announcing the activation of the Ninth Air Force, comprising all U. S. AAF units in the Middle East theater. It also dissolved the Headquarters Squadron, United States Army Middle East Air Force, and confirmed the activation by the War Department of Headquarters Squadron, Ninth Air Force. The Air Service Command, United States Army Middle East Air Force was dissolved and the IX Air Service Command, Ninth Air Force was announced as activated by Section II of the same general order.

159. Administrative History, Ninth Air Force.

160. GO No. 1, sec. III, Hq. 9th AF, dated 12 Nov. 1942.

161. Pursuant to the authority contained in WD Radio 1991, dated 25 Nov. 1942, sec. III of GO No. 1, Hq. 9th AF, was rescinded by GO No. 3, sec. II, of the same office, dated 27 Nov. 1942.

162. GO #24, par. 1, Hq. USAFIME, dated 14 Nov. 1942.

163. GO #3, sec. I, Hq. 9th AF, dated 27 Nov. 1942. See also CM-OUT-8032 (11-25-42), OPD, thru Marshall, to CG USAFIME, #1991, 25 Nov. 42.

164. Desert Campaign, 32-33.

165. CM-OUT-2787 (11-9-42), Marshall to Andrews, Cairo #1713, 9 Nov. 42.

166. Ibid. See also Administrative History, Ninth Air Force.

167. Historical Background of the 316th Troop Carrier Group to 12 Aug. 1943. Group Headquarters and the 36th and 37th Squadrons reached Deversoir, Egypt, on 23 and 24 November 1942. The 45th arrived at Ismailia on 25 November. Owing to the detention of the 44th Squadron at Accra for the carrying out of two missions to Leopoldville in the Belgian Congo, this unit did not reach its station at Ismailia until 4 December. The ground echelon came by ship, and consequently did not arrive in the Middle East until 1 February 1943. Operations, however, were begun on 23 November. (Ibid.) For arrangements regarding ground support for this unit, see CM-IN-5280 (11-12-42), Cairo to AGWAR, AMSME #2489, 12 Nov. 42.

168. Directive, Gen. Arnold to CG 9th AF, 9 Nov. 1942, attached to [Maj. John E. Felton], Organizational History of the 9th Combat Camera Unit, dated 4 June 1943. The unit was designated in Washington on 21 November 1942. (See AG 320.2, ltrs. of 14 and 21 Nov. 1942.) Its activation was announced by GO No. 4, Hq. 9th AF, 30 Nov. 1942. Accompanying authority was a directive from CG AAF, dated 10 Nov. 1942, entitled "Motion Picture Coverage of Army Air Forces Activities in Combat Theaters," and the directive of 9 Nov. 1942, already cited.

169. Soon after its arrival in Egypt on 1 February 1943, the Headquarters, 9th Combat Camera Unit was merged with detachments already in the field. See GO No. 10, USAFIME, dated 6 Feb. 1943.

170. Administrative History, Ninth Air Force. See also Brief Historical Record of the 9th Combat Camera Unit, dated 24 May 1943, and CM-OUT-7908 (12-23-42), Arnold to Brereton for Greenwald #2493, 22 Dec. 42.

171. JCS, 46th Meeting, 15 Dec. 1942, Item 10, in J/CCS Div., 370.5, Caucasus (10-5-42). See also CM-IN-8629 (12-20-42), Boswell (Moscow) to MILID, #150, 19 Dec. 42. Reasons for the unwillingness of the Soviet Government to accept the proposal as offered are given in CM-IN-11066 (11-26-42), Adler to Marshall and Andrews, thru Moscow to WD, Moscow #124, 25 Nov. 1942; and CM-IN-2607 (12-6-42), Cairo (Andrews) to AGWAR, AMSME #2971, 4 Dec. 42. Meanwhile a study of the operational maps of Caucasus areas had revealed many airdromes suitable for heavy-bomber planes. If, for any reason, aircraft only had been given, it was suggested that authority be reserved to use these fields as advance bases for raids against such targets of mutual interest as Roumanian oil centers and German lines of communication to Eastern Europe. CM-IN-12335 (11-29-42), Adler to Marshall and Andrews, Moscow #125, 27 Nov. 42.

172. CM-OUT-2295 (1-7-43), Marshall to CG USAFIME, AMSME #2739, 7 Jan. 43; and CM-IN-11370 (1-23-43), Brereton to Arnold and Marshall, thru Cairo to AGWAR, AMSME #4090, 20 Jan. 43.

173. Interviews with Brig. Gen. John E. Upston, 27 Nov. and 8 Dec. 1942. A report for the week ending 8 Nov. 1942 listed the following Douglas Aircraft employees at Gura:
Americans--1933
Americans on loan--149
Natives--1169
Italians--421

The status of the building program in percentages was:
Power house--27 (new installations)
Barracks--95
Hospital--95
Laundry, bakery, and warehouses--95
Recreation--88
General shops--86
Gasoline storage--74

CM-IN-5820 (11-13-42), Bishop, via Speck, to CG AAF, AMGAD #67, Asmara, 11 Nov. 42.

174. Ltr., Gen. Arnold to Gen. Brereton, 23 Oct. 1942 with incls., in AAG 381. See also Col. John E. Upston's "Observations of Air Force Activities in the Middle East, 1-15 Oct. 1942," attached to R&R, 20 Jan. 1943, in AAG 300, Africa; and ltr., Andrews to Arnold, 22 Nov. 1942, attached to Gen. Arnold's reply, 19 Dec. 1942, in AAG 312.

175. Administrative History, Ninth Air Force.

176. Interviews with Brig. Gen. John E. Upston.

177. Ltr., Gen. Brereton to Gen. Arnold, 21 Nov. 1942, in 9th AF file.

178. Sustained direct action against targets in southern Europe had been included in a list of major strategic objectives which General Brereton had drawn up in the summer. See Summary of Cables 526 to 530 inclusive, Brereton to Arnold, 4 Aug. 1942, attached to memo for AFDAS by AFAEP, 11 Aug. 1942, in WP-III-Near East Overall.

179. CM-IN-11356 (11-26-42), Brereton to Arnold, thru Cairo to AGWAR, AMSME #2769, 25 Nov. 42.

180. CM-IN-2538 (12-6-42), Brereton to Arnold, thru Andrews to AGWAR, AMSME #2984, Cairo, 5 Dec. 42. After 4 December 1942, the missions of the 98th Bombardment Group were largely to Sicily and Italy. See interview with Maj. Thomas T. Omohundro, about 21 May 1943, in U. S. 9000.

GLOSSARY

AAG	Air Adjutant General
ABDA	American-British-Dutch-Australian Command
ACFC	Air Corps Ferrying Command
AC/S	Assistant Chief of Staff
AFAAP	AC/AS, Administration and Personnel
AFABI	AC/AS, Intelligence
AFACT	AC/AS, Operations and Training
AFADS	AC/AS, Materiel and Supply
AFAEP	AC/AS, Plans
AFAMC	Air Materiel Command
AFASC	Air Service Command
AFATC	Air Transport Command
AFCAS	Chief of Air Staff
AFCC	Air Force Combat Command
AFDAS	Deputy Chief of Air Staff
AFDOP	Director of Personnel
AFIHI	Historical Division, AC/AS, Intelligence
AFMAG	Air Adjutant General
AFPMP	Military Personnel Division
AFRDB	Director of Bombardment
AFROM	Director of War Organization and Movement
AG (TAG)) AGWAR)	Adjutant General, War Department
AMEW	Africa-Middle East Wing
AMGAD	Gura Air Depot
AMMISCA	American Military Mission in China
AMSEG	Depot headquarters, Asmara
AMSIR	American Mission in Iran (Basra)
AMSME	American Military Mission, Middle East
AOC	Air Officer Commanding
Aquila	Tenth Air Force Headquarters
AWPD	Air War Plans Division
BOAC	British Overseas Airways Corporation
CCS	Combined Chiefs of Staff
DAO	Defense Aid Office
GO	General Orders
JCS	Joint Chiefs of Staff (of the United States)

LATI	Linhas Aereas Transcontinentaes Italianas
MA	Military Attache
MILID	Military Intelligence Division, War Department
MO	Military Observer
NEI	Netherlands East Indies
OC&R	Operations, Commitments, & Requirements
ONI	Office of Naval Intelligence
OPD	Operations Division, War Department General Staff
OPM	Office of Production Management
OSS	Office of Strategic Services
PAA	Pan American Airways
SAAF	South African Air Force
SAS	Secretary of the Air Staff
SOS	Services of Supply
SPOBS	Special Military Observers Group
T/BA	Table of Basic Allowances
TCC	Troop Carrier Command
USAAFIME	United States Army Air Forces in the Middle East
USAFIME	United States Army Forces in the Middle East
USAMEAF	United States Army Middle East Air Force
USMNAM	United States Military North African Mission
WDGS	War Department General Staff
WPD	War Plans Division, War Department General Staff

BIBLIOGRAPHICAL STATEMENT

Documents used in the preparation of this study consist of a variety of official papers; reports; letters, memos, and other forms of Army correspondence; recorded interviews; orders; cable and radio messages; unit histories; and a few printed sources (e.g., recent articles and books pertaining to operations in North Africa).

Bibliographical citations in the notes include the repositories in which the documents are found, and the following codes and symbols used in their designation:

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AAF Message Center: Messages both in this collection and in AFIHI files were used. No effort has been made to distinguish between them. In some of the early messages, the numbering is inadequate or lacking entirely. In either case the citation has been given as fully as possible.

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Historical Division (AFIHI files): Works consulted in this collection are cited by title only, without further designation.
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INDEX

A

Q

R

Y

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